PB82-123670

# Water Resources Data for Texas, Water Year 1980 Volume 1: Arkansas River Basin, Red River Basin Sabine River Basin, Neches River Basin, Trinity River Basin and Intervening Coastal Basins

(U.S.) Geological Survey
Austin, TX

Aug 81

U.S. Department of Commerce
National Technical Information Service
NTIS

PB82-123670

# Water Resources Data for Texas

## Volume 1. Arkansas River Basin, Red River Basin, Sabine River Basin, Neches River Basin, Trinity River Basin and Intervening Coastal Basins

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-80-1

## WATER YEAR 1980

Prepared in cooperation with the State of Texas and with other agencies

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INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA 22161

# CALENDAR FOR WATER YEAR 1980

## 1979

### OCTOBER

| S | M | T | W | T | F | S |
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### NOVEMBER

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## 1980

### JANUARY

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### FEBRUARY

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### APRIL

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### JUNE

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### AUGUST

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### SEPTEMBER

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| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 |  |  |  |  |

U.S. DEPARTMENT OF THE INTERIOR
March 3, 1849

# Water Resources Data for Texas

## Volume 1. Arkansas River Basin, Red River Basin, Sabine River Basin, Neches River Basin, Trinity River Basin and Intervening Coastal Basins

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-80-1

WATER YEAR 1980

Prepared in cooperation with the State of Texas and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

JAMES G. WATT, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

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1981

## Preface

This report was prepared by the U.S. Geological Survey in cooperation with the State of Texas and other agencies by personnel of the Texas district of the Water Resources Division under the supervision of C. W. Boning, District Chief, and Alfred Clebsch, Jr., Regional Hydrologist, Central Region.

This report is one of a series issued by State under the general direction of Phil Cohen, Chief Hydrologist, and R. J. Dingman, Assistant Chief Hydrologist for Scientific Publications and Data Management.

Data for Texas are in three volumes as follows:

| | |
|---|---|
| Volume 1. | Arkansas River basin, Red River basin, Sabine River basin, Neches River basin, Trinity River basin, and intervening and adjacent Coastal basins |
| Volume 2. | San Jacinto River basin, Brazos River basin, San Bernard River basin, and intervening Coastal basins |
| Volume 3. | Colorado River basin, Lavaca River basin, Guadalupe River basin, Nueces River basin, Rio Grande basin, and intervening Coastal basins |

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Surface-water data for the 1980 water year for Texas are presented in three volumes, appropriately identified as to content by river basins. Data in each volume consist of records of stage, discharge, and water quality of streams and canals; and stage, contents, and water quality of lakes and reservoirs. Also included are crest-stage and flood-hydrograph partial-record stations, reconnaissance partial-record stations, and low-flow partial-record stations. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements. Records for a few pertinent stations in bordering States are also included. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Texas.

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# WATER RESOURCES DATA FOR TEXAS, 1980

## VOLUME 1

## ARKANSAS RIVER BASIN, RED RIVER BASIN, SABINE RIVER BASIN, NECHES RIVER BASIN, TRINITY RIVER BASIN, AND INTERVENING AND ADJACENT COASTAL BASINS

## INTRODUCTION

Surface-water data for Texas for the 1980 water year are presented in three volumes, appropriately identified by river basins. Data in each each volume consist of records of stage, discharge, and water quality of streams and canals; and stage, contents, and water quality of lakes and reservoirs. Records for a few pertinent stations in bordering states are also included. These data represent that part of the National Water Data System operated by the U.S. Geological Survey in cooperation with State and Federal agencies in Texas.

Records of discharge (or stage) of streams and contents (or stage) of lakes and reservoirs were first published in a series of Geological Survey Water-Supply Papers entitled, "Surface Water Supply of the United States." Through water year 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperature, and suspended sediment were published from 1941 to 1971 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, Virginia 22202.

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1974 were similarly released either in separate reports or in conjunction with streamflow records. Beginning with the 1975 water year, water data for streamflow and water quality are published as an official Survey report on a State-boundary basis. These official Survey reports carry an identification number consisting of the two letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report TX-80-1." Water-data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

## COOPERATION

Organizations that assisted in the collection of data in this report through joint funding agreements with the Geological Survey in 1980 are:

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Sabine River Compact Administration, Lamar Carroon, Federal Representative and Chairman; R. J. Palmer and G. R. Dyson for Louisiana; and J. M. Syler and Nelson Davis for Texas.

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City of Dallas, Monroe McCorkle, Director of Public Works.

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National Park Service.

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## HYDROLOGIC CONDITIONS

Large variations in rainfall and runoff characterize the usual hydrologic conditions in Texas. In the east, streams are usually deep with wide alluvial flood plains, and streamflow is generally perennial. Normal annual rainfall exceeds 50 inches in the extreme east and annual runoff may average as much as 15 inches. In the west, streams are generally of the arroyo type and streamflow is highly ephemeral. Normal annual rainfall is less than 8 inches in the extreme west and annual runoff averages less than 0.1 inch in many areas.

During the 1980 water year, runoff for index station North Bosque River near Clifton, located in the central part of the State was in the deficient range (within the lowest 25 percent of record), with a mean discharge of only 19 percent of the long-term median. The other three index stations, Neches River near Rockland, located in east-central Texas, Guadalupe River near Spring Branch, located in south-central Texas, and North Concho River near Carlsbad, located in west Texas, were in the normal runoff range for the year. Figure 1 on page 28 shows a comparison of monthly and annual mean discharges for the index stations. Conservation storage in a selected group of 63 reservoirs, with a combined conservation capacity of 30,252,000 acre-feet, decreased from 86 percent of capacity in September 1979 to 75 percent of capacity in September 1980. Records from the 63 reservoirs show that 52 reservoirs decreased in contents, 10 increased, and one remained the same.

At the beginning of the 1980 water year, streamflow was in the deficient range in the northeastern part of the State, excessive (within the highest 25 percent of record) along the Gulf coast, and near normal in the remainder of the State. At the end of the first quarter, accumulated rainfall amounts were below normal across most of the State, with deficient runoff conditions existing across the entire northern half of the State. At the end of the second quarter, conditions were basically unchanged, with deficient runoff occurring in the northern half of the State and near-normal conditions existing in the southern half.

By late June, a combination of below-normal rainfall and record-breaking high temperatures brought moderate drought conditions to all of north and east Texas. At the end of July, drought conditions had further intensified in north and east Texas and below-normal runoff conditions existed across the entire State, except for the Guadalupe River basin in south-central Texas where conditions were normal.

Runoff conditions remained unchanged until mid-August when Hurricane Allen produced drought-breaking rainfall along its westward path across south and southwest Texas. A further improvement in flow conditions occurred in early September in the wake of tropical storm Danielle which produced heavy rainfall in the central and west-central parts of the State. At the end of the water year, deficient runoff conditions continued in a large portion of east-central Texas, above-normal conditions existed in south-central and west Texas, and normal conditions existed in the remainder of the state.

## DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting English units to International System (SI) on the inside of the back cover.

During water year 1978, revisions were made in the terminology used to define 143 of the water-quality parameter codes that have been used by the Geological Survey in its publication of water-quality data in its WATSTORE data system. These revisions were made to achieve consistency in terminology. They do not represent a change in the way the codes have been used in the part or in the association of specific code numbers with identified analytical procedures.

Use of the new terminology began with data for the 1978 water year, and therefore, it first appears in that publication. Definitions on which the terminology is based are included in the "Definitions" sections of this report.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet, about 326,000 gallons, or 1,233 cubic meters.

Algae are mostly aquatic, single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

> Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C ± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL (milliliters) of sample.
>
> Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C + 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in $g/m^3$ (grams per cubic meter), and periphyton and benthic organisms in $g/m^2$ (grams per square meter).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Biomass pigment ratio is the ratio of organic mass in $mg/m^2$ (milligrams per square meter) to the mass of chlorophyll *a*, in $mg/m^2$.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organisms which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multi-celled and are counted according to the number of contained cells per sample, usually mL or L (liters).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-ft, about 646,000 gallons or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake, and unless otherwise indicated is computed on the basis of a level pool. The computation does not include bank storage.

Control designates a feature downstream from a gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Cubic foot per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foor per second (FT$^3$/S, ft$^3$/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second. This rate is equivalent to approximately 7.48 gallons per second, 448.8 gallons per minute, or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to that material in a representative water sample which passes through a 0.45 µm membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

where $n_i$ is the number of individuals per taxon, $n$ is the total number of individuals, and $s$ is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified location. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.HT.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (μg/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L, μg/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

ND is used in some of the tables of pesticide data as an abbreviation for "Not Detected." Analyses in which this term is reported were made by the U.S. Environmental Protection Agency laboratory in Bay Saint Louis, Mississippi.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters ($m^2$), acres, or hectares. Periphyton benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined either by sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

| Clasification | Size (mm) | Method of analysis |
|---|---|---|
| Clay......... | 0.00024 - 0.004 | Sedimentation |
| Silt......... | .004 - .062 | Do. |
| Sand......... | .062 - 2.0 | Sedimentation or sieve |
| Gravel....... | 2.0 - 64.0 | Sieve |

The particle-size ditribution given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass, or volume.

Periphyton is the assemblage of microorganisms attached to and growing upon solid surfaces. While primarily consisting of algae, the assemblage may include bacteria, fungi, protozoa, rotifers, and other small organisms.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides and herbicides, which control insects and plants respectively, and are the two categories reported.

Picocurie (PC, pCi) is one trillionth ($1 \times 10^{-12}$) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields $3.7 \times 10^{10}$ radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats of floating "moss" in lakes. Their concentrations are expressed as number of cells/mL of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column, and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon baceria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Recoverable from bottom material refers to the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usuage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream, or is the quantity of sediment, as measured by dry weight or volume, that passes a section during a given time. It is computed by multiplying discharge ($ft^3/s$) times mg/L times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. This ratio should be known especially for water used for irrigation.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content in the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

> Natural substrates refers to any naturally occurring emersed or submersed solid surface, such as rock or tree, upon which an organism lived.
>
> Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Suspended, recoverable refers to the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 μm membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total refers to the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total." Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total numbers of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour day.

Total refers to the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Total in bottom material refers to the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the mean discharge ($ft^3/s$), times the mg/L of the constituent, times the factor 0.0027, times the number of days.

*Total, recoverable* refers to the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

*Taxonomy* is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, *Hexagenia limbata* is the following:

Kingdom....................Animal
Phylum..................Arthropoda
Class......................Insecta
Order................Ephemeroptera
Family.................Ephemeridae
*Genus*...................*Hexageria*
*Species*..........*Hexagenia limbata*

*Weighted average* is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

*WDR* is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual basic-data reports.

*WRD* is used as an abbreviation for "Water Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

*WSP* is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

## DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indention in a list of stations in the front of the report. Each indention represents one rank. This downstream order and system of indention show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The station numbering system is not used at miscellaneous sites where only random water-quality samples or discharge measurements are taken. The complete number for each station consists of eight digits, such as 08123800. The first two digits, 08 or 07, identify the river basin as previously published in the series of water-supply papers on the Surface Water Supply of the United States. The digits 07 indicate the Lower Mississippi River basin, and the digits 08 indicate the Western Gulf of Mexico Basins. The remaining six digits of the station number are sequential in downstream order.

All records for a drainage basin that extends across State boundaries can be arranged in downstream order by assembling the pages from the appropriate State reports by station number.

## SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins that have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network (NASQAN) is a data collection network designed by the Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled gaging stations where additional samples are collected monthly or twice a year (at high and low flow) to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

## EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

### Collection and computation of data

The basic data collected at gaging stations consist of (1) records of stage; (2) measurements of discharge of streams and canals; and (3) stage, surface area, and contents of lakes and reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement basic data in determining the daily flow or volume of water in storage. Records of stage are obtained from direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at 5-, 15-, 30-, or 60-minute intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in standard textbooks, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6. Surface areas of lakes or reservoirs are determined from instrument surveys using standard methods. The configuration of the reservoir bottom is often determined by sounding at many points.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening mesurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables; monthly and yearly mean discharges are computed from the daily values. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors (based on individual discharge measurements and notes by the hydrologists or observers) are used in applying the gage heights to the rating tables.

At some stream-gaging stations, the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations, the stage-discharge relation is affected by changing stage; at these stations, the rate of change in stage is used as a factor in computing discharge.

For a lake- or reservoir-gaging station, a capacity table giving the contents for any stage is prepared from a stage-area relation curve defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly changes in contents are computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys, the computed contents may be increasingly in error due to the gradual accumulation of sediment. However, the change in contents is not affected to the same extent.

At some gaging stations, there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. For such periods, the daily discharges are estimated on the basis of recorded range in stage, adjoining good record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Daily contents may be estimated on the basis of operator's log, adjoining good record, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly values. For gaging stations on streams or canals, a table showing the daily, monthly, and yearly discharge is given. For a gaging station on a reservoir, a table showing the daily contents is given. Tables of daily or maximum and minimum daily gage heights are included for some gaging stations. Records are published for the water year, which begins on October 1 and ends on September 30. A calendar for the current water year is shown on the inside of the front cover to facilitate finding the day of the week for any date.

The description of the gaging stations, except those partial-record stations published in tabular form in the back of the report, gives the location, drainage area, period of record, type and history of gages, average discharge, extremes of discharge or contents, general remarks, and notations of revisions of previously published records. The location of the gaging stations and the drainage areas are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies (U.S. Water Resources Council, 1968). Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records for some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use, the datum of the present gage referred to National Geodetic Vertical Datum, and a condenced history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITIONS OF TERMS" on page 9.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow at the gaging station is given under "REMARKS." For reservoir stations, information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the statistic to have little significance. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the maximum stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge, it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations additional peak discharges are listed under EXTREMES FOR THE CURRENT YEAR; if they are all independent peaks above a selected base. The time of occurrence of the peaks and corresponding gage heights are also listed. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in separate paragraph following the table of peaks.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily mean discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are generally omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the significant statistics for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables in the back of the report. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual, maximum stage and (or) discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made and samples collected within a short time period to investigate the seepage and (or) pollutant gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements and analyses are also given in special tables following the tables of partial-record stations.

## Accuracy of field data and computed results

The accuracy of discharge data depends primarily on (1) the stability of the stage-discharge relation, or if the control is unstable, the frequency of discharge measurements; and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and

1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff because of the effects of diversion, municipal and industrial effluents consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, values for cubic feet per second per square mile and runoff in inches are not published unless satisfactory adjustments can be made. Adjustments for evaporation from a reservoir are not included in the published changes in reservoir contents, unless it is so stated.

### Other data available

Information of a more detailed nature than that published for most of the gaging stations, such as observations of water temperatures, discharge measurements, gage-height records, and rating tables, is on file in the Texas District Office in Austin. Most gaging-station records are available in computer-usable form, and many statistical analyses have been made.

### Records of discharge collected by agencies other than the Geological Survey

The International Boundary and Water Commission, United States and Mexico, operates all gaging stations on the Rio Grande and near the mouth of its principal tributaries at and below El Paso, Texas. Records collected at these stations are published in annual bulletins by the Commission and may be obtained from the International Boundary and Water Commission, United States Section, P. O. Box 20003, El Paso, Texas 79998.

## EXPLANATION OF SURFACE-WATER QUALITY RECORDS

### Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

## Water analysis

Most methods for collecting and analyzing water samples are described in U.S. Geological Survey Techniques of Water Resources Investigations listed below.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating loads.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between the reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is probably the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and biocarbonate.

At stream-gaging stations where daily samples are obtained, tables are included to show monthly and annual weighted averages of specific conductance; weighted average concentrations of dissolved solids, chloride, sulfate, hardness; and loads of dissolved solids, chloride, and sulfate. The weighted averages have been computed by using the daily records of specific conductance and developing regression relationships between each water-quality parameter and specific conductance.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean value for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

At some stations where continuous or daily records of specific conductance are obtained, concentrations of selected chemical constituents have been computed from regression relationships between specific conductance and the chemical constituents. The weighted average, monthly and annual concentrations and/or loads of these constituents may be published in this report. For each station where this has been done, a statement so indicating has been included in the remarks section of the station description.

### Water temperature

Water temperatures are measured at most of the water-quality stations. Water temperatures are also taken at time of discharge measurements at gaging stations. At sites at which daily samples are taken, the water temperature is taken about the same time each day. Large streams have a small diurnal temperature change; but small, shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams and reservoirs may be affected by waste-heat discharges.

At stations where digital recording thermographs are present, the records published consist of maximum, minimum, and mean temperatures for each day and the monthly averages.

### Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross section.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected twice daily or, in some instances, hourly. The published values of sediment discharges for days of rapidly changing flow or concentrations were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days in which the published value of sediment discharge differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water-sediment discharge relations, sediment concentrations observed immediately before and after periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow and in estimating long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

## PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Most methods used by the U.S. Geological Survey have been published in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature-influential factors, field measurements, and data presentation,* by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 p.

3-A1. *General field and office procedures for indirect measurements,* by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 p.

3-A2. *Measurement of peak discharge by the slope-area methods,* by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 p.

3-A3. *Measurement of peak discharge at culverts by indirect methods,* by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 p.

3-A4. *Measurement of peak discharge at width contractions by indirect methods,* by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 4 p.

3-A5. *Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 p.

3-A6. *General procedure for gaging streams,* by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 p.

3-A7. *Stage measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 p.

3-A8. *Discharge measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 p.

3-A11. *Measurement of discharge by moving-boat method,* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 p.

3-C1. *Fluvial sediment concepts,* by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 p.

3-C2. *Field methods for measurement of fluvial sediment,* by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 p.

3-C3. *Computation of fluvial-sediment discharge,* by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 p.

4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 p.

4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 p.

4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 p.

4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 p.

4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 p.

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. W. Skougstad and others: USGS--TWRI Book 5, Chapter A1. 1979. 626 p.

5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 p.

5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 p.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 p.

5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 p.

5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 p.

8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 p.

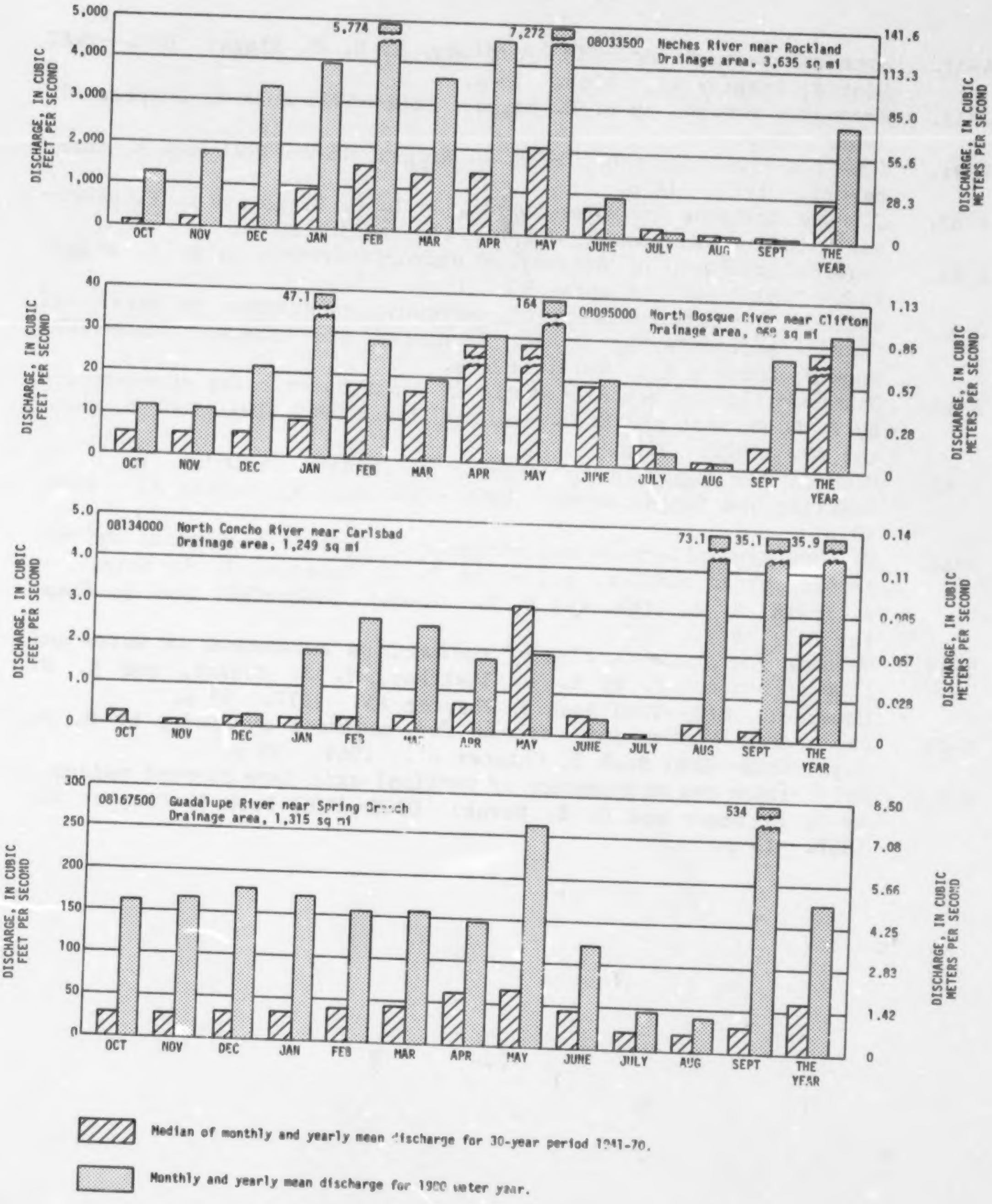

FIGURE 1.--COMPARISON OF DISCHARGE AT FOUR LONG-TERM REPRESENTATIVE GAGING STATIONS DURING THE 1980 WATER YEAR WITH MEDIAN DISCHARGE FOR THE PERIOD 1941-70

## ARKANSAS RIVER BASIN

### 07227000 CANADIAN RIVER AT LOGAN, NM

**LOCATION.**--Lat 35°21'25", long 103°25'03", in NE1/4NE1/4 sec.15, T.13 N., R.33 E., Quay County, Hydrologic Unit 11080006, on left bank 1,100 ft (340 m) upstream from bridge on U.S. Highway 54, 0.7 mi (1.1 km) south of Logan, 1.4 mi (2.3 km) upstream from Chicago, Rock Island, & Pacific Railroad Co. bridge, 2.0 mi (3.2 km) downstream from Ute Dam, 4.3 mi (6.9 km) upstream from Revuelto Creek, and at mile 672.0 (1,081.2 km).

**DRAINAGE AREA.**--11,141 mi$^2$ (28,855 km$^2$), of which 1,110 mi$^2$ (2,870 km$^2$) probably is noncontributing.

**PERIOD OF RECORD.**--June 1904 to November 1905 (gage heights and discharge measurements only), December 1908 to September 1909, February, April to July 1910, August 1910 to September 1911 (gage heights and discharge measurements only), October 1911 to May 1914, January to May 1924, September 1924 to July 1925, January 1927 to April 1934, August 1934 to current year. Monthly discharge only for some periods, published in WSP 1311. Records for December 1909, January 1910, and May to July 1934, published in WSP 267, 287, and 762 are unreliable and should not be used. Published as South Canadian River, June to September 1904.

**REVISED RECORDS.**--WSP 1087: 1935-36. WSP 1117: Drainage area. WSP 1281: 1912, 1932(M), 1934, 1945-47, 1949-50. WSP 1311: 1931(M). See also PERIOD OF RECORD.

**GAGE.**--Water-stage recorder. Datum of gage is 3,668.1 ft (1,118.04 m) National Geodetic Vertical Datum of 1929. See WSP 1311 or 1731 for history of changes prior to Oct. 1, 1934.

**REMARKS.**--Records fair prior to July and poor thereafter. Flow regulated by Conchas Lake, 45 mi (72 km) upstream, and Ute Reservoir, 2 mi (3 km) upstream. Diversions for irrigation of about 90,000 acres (360 km$^2$) above station. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--15 years (water years 1909, 1912-13, 1927-38) prior to completion of Conchas Dam 392 ft$^3$/s (11.10 m$^3$/s), 284,000 acre-ft/yr (350 hm$^3$/yr); 24 years (water years 1939-62) prior to completion of Ute Dam, 257 ft$^3$/s (7.278 m$^3$/s), 186,200 acre-ft/yr (230 hm$^3$/yr); 18 years (water years 1963-80) regulated, 29.4 ft$^3$/s (0.833 m$^3$/s), 21,300 acre-ft/yr (26.3 hm$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD (SINCE 1925).**--Maximum discharge, 219,000 ft$^3$/s (6,200 m$^3$/s) Sept. 22, 1941, gage height, 29.3 ft (8.93 m), from floodmarks, from rating curve extended above 75,000 ft$^3$/s (2,120 m$^3$/s); no flow at times prior to completion of Ute Dam.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum discharge, 278,000 ft$^3$/s (7,870 m$^3$/s) Sept. 30, 1904, gage height, about 36.5 ft (11.13 m), site and datum used in 1909, from rating curve extended above 14,000 ft$^3$/s (396 m$^3$/s), from Ninth Biennial Report of State Engineer.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 336 ft$^3$/s (9.52 m$^3$/s) Nov. 1, gage height, 3.75 ft (1.143 m); minimum, 1.1 ft$^3$/s (0.031 m$^3$/s) Oct. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.7 | 170 | 2.9 | 2.7 | 2.1 | 3.2 | 2.5 | 1.7 | 2.0 | 1.7 | 1.5 | 1.2 |
| 2 | 1.8 | 329 | 3.1 | 2.7 | 2.1 | 3.1 | 3.6 | 1.7 | 2.0 | 1.7 | 1.5 | 1.2 |
| 3 | 1.7 | 324 | 3.1 | 2.7 | 2.1 | 3.0 | 2.9 | 1.8 | 2.0 | 1.8 | 1.5 | 1.2 |
| 4 | 1.6 | 321 | 2.9 | 2.7 | 2.1 | 2.8 | 2.7 | 1.9 | 2.0 | 1.6 | 1.5 | 1.2 |
| 5 | 1.6 | 317 | 2.7 | 2.5 | 165 | 2.9 | 2.7 | 1.9 | 1.9 | 1.5 | 1.9 | 1.5 |
| 6 | 1.6 | 313 | 2.7 | 2.5 | 310 | 2.8 | 2.5 | 1.9 | 1.8 | 1.5 | 2.2 | 3.0 |
| 7 | 1.6 | 311 | 2.7 | 2.3 | 310 | 2.7 | 2.3 | 2.1 | 1.7 | 1.5 | 1.6 | 2.8 |
| 8 | 1.6 | 233 | 2.7 | 2.3 | 310 | 2.7 | 2.1 | 3.0 | 3.1 | 1.5 | 1.5 | 1.8 |
| 9 | 1.6 | 5.1 | 2.7 | 2.3 | 310 | 2.8 | 2.3 | 2.0 | 2.4 | 1.6 | 1.5 | 1.8 |
| 10 | 1.9 | 4.0 | 2.7 | 86 | 310 | 2.7 | 2.3 | 1.9 | 3.8 | 1.5 | 1.4 | 2.2 |
| 11 | 1.9 | 3.5 | 2.5 | 281 | 312 | 2.7 | 2.1 | 1.8 | 2.9 | 1.5 | 1.3 | 2.6 |
| 12 | 1.9 | 3.1 | 2.7 | 285 | 310 | 2.4 | 2.3 | 1.7 | 2.3 | 1.5 | 1.3 | 2.0 |
| 13 | 1.9 | 3.1 | 2.7 | 285 | 310 | 2.4 | 2.1 | 2.0 | 2.1 | 1.6 | 2.0 | 1.5 |
| 14 | 1.9 | 3.1 | 2.7 | 285 | 310 | 3.7 | 2.1 | 2.2 | 1.9 | 1.5 | 11 | 1.5 |
| 15 | 1.9 | 3.1 | 2.7 | 204 | 311 | 5.6 | 2.1 | 3.5 | 1.7 | 1.5 | 2.9 | 1.5 |
| 16 | 1.8 | 3.1 | 2.7 | 4.3 | 309 | 4.8 | 2.1 | 2.7 | 1.8 | 2.8 | 2.3 | 1.5 |
| 17 | 1.9 | 3.1 | 2.7 | 3.1 | 306 | 4.4 | 1.9 | 2.3 | 2.1 | 3.2 | 1.8 | 1.5 |
| 18 | 2.0 | 2.9 | 2.7 | 2.7 | 304 | 3.9 | 2.0 | 2.4 | 2.1 | 1.9 | 1.4 | 1.5 |
| 19 | 2.3 | 3.0 | 2.7 | 2.3 | 303 | 3.7 | 2.0 | 2.4 | 2.0 | 1.5 | 1.2 | 1.5 |
| 20 | 2.5 | 3.0 | 2.7 | 2.5 | 300 | 3.6 | 2.0 | 2.4 | 2.1 | 1.3 | 1.2 | 1.5 |
| 21 | 2.2 | 2.9 | 2.7 | 2.5 | 216 | 3.6 | 1.9 | 2.3 | 2.2 | 1.8 | 1.2 | 1.5 |
| 22 | 2.0 | 2.7 | 2.5 | 2.3 | 6.6 | 3.6 | 2.0 | 2.3 | 1.9 | 1.9 | 1.2 | 1.5 |
| 23 | 1.9 | 2.9 | 2.5 | 2.3 | 4.2 | 3.8 | 1.9 | 2.4 | 1.9 | 1.9 | 1.2 | 1.5 |
| 24 | 2.0 | 2.7 | 2.5 | 2.3 | 3.7 | 3.3 | 3.1 | 2.3 | 1.7 | 3.1 | 1.2 | 1.5 |
| 25 | 2.0 | 2.7 | 2.5 | 2.3 | 3.4 | 3.3 | 3.0 | 2.1 | 1.5 | 2.1 | 1.2 | 1.5 |
| 26 | 2.1 | 2.9 | 2.5 | 2.2 | 3.2 | 3.3 | 1.8 | 2.2 | 1.5 | 2.1 | 1.2 | 2.3 |
| 27 | 1.8 | 2.9 | 2.5 | 2.0 | 3.2 | 3.6 | 1.8 | 2.3 | 1.5 | 2.0 | 1.2 | 2.9 |
| 28 | 1.8 | 2.9 | 2.7 | 2.1 | 3.3 | 3.3 | 1.7 | 2.7 | 1.5 | 1.5 | 1.2 | 2.7 |
| 29 | 1.8 | 2.9 | 2.7 | 2.1 | 3.2 | 3.1 | 1.6 | 2.3 | 1.7 | 1.5 | 1.2 | 2.3 |
| 30 | 3.1 | 2.9 | 2.7 | 2.1 | --- | 3.1 | 1.7 | 2.3 | 1.7 | 1.5 | 1.2 | 1.8 |
| 31 | 2.5 | --- | 2.7 | 2.1 | --- | 2.9 | --- | 2.2 | --- | 1.5 | 1.2 | --- |
| TOTAL | 59.9 | 2386.5 | 83.5 | 1487.9 | 5045.2 | 102.8 | 67.1 | 68.7 | 60.8 | 55.1 | 55.7 | 54.0 |
| MEAN | 1.93 | 79.6 | 2.69 | 48.0 | 174 | 3.32 | 2.24 | 2.22 | 2.03 | 1.78 | 1.80 | 1.80 |
| MAX | 3.1 | 329 | 3.1 | 285 | 312 | 5.6 | 3.6 | 3.5 | 3.8 | 3.2 | 11 | 3.0 |
| MIN | 1.6 | 2.7 | 2.5 | 2.0 | 2.1 | 2.4 | 1.6 | 1.7 | 1.5 | 1.3 | 1.2 | 1.2 |
| AC-FT | 119 | 4730 | 166 | 2950 | 10010 | 204 | 133 | 136 | 121 | 109 | 110 | 107 |

CAL YR 1979 TOTAL 7439.2 MEAN 20.4 MAX 968 MIN 1.0 AC-FT 14760
WTR YR 1980 TOTAL 9527.2 MEAN 26.0 MAX 329 MIN 1.2 AC-FT 18900

## 07227100 REVUELTO CREEK NEAR LOGAN, NM

LOCATION.--Lat 35°20'28", long 103°23'40", in SW1/4NW1/4 sec.24, T.13 N., R.33 E., Quay County, Hydrologic Unit 11080008, on right bank 0.3 mi (0.5 km) upstream from bridge on State Highway 39, 1.9 mi (3.1 km) southeast of Logan, and at mile 2.3 (3.7 km).

DRAINAGE AREA.--786 mi² (2,036 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1959 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,665 ft (1,117 m), from topographic map.

REMARKS.--Water-discharge records poor. Low flows supplemented by surface- and ground-water return from irrigation in vicinity of Tucumcari.

AVERAGE DISCHARGE.--21 years, 44.2 ft³/s (1.252 m³/s), 32,020 acre-ft/yr (39.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,700 ft³/s (756 m³/s) July 9, 1960, gage height, 14.3 ft (4.36 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD (1941-47).--Maximum discharge determined, about 13,400 ft³/s (379 m³/s) Sept. 18, 1946, gage height, 9.04 ft (2.755 m), at site 500 ft (150 m) downstream at different datum, from unpublished records collected by Water and Power Resources Services.

A peak discharge of 26,100 ft³/s (739 m³/s), date unknown, gage height, 12.9 ft (3.93 m), was measured by slope-area method in May 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,650 ft³/s (75.0 m³/s) Aug. 5, gage height, 5.11 ft (1.558 m), no peak above base of 3,500 ft³/s (99.1 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.0 | 85 | .20 | .00 | .80 | .00 | .00 | 4.9 | .00 | .00 | .00 | 12 |
| 2 | 2.0 | 28 | .18 | .00 | .87 | .00 | .01 | 3.1 | .00 | .00 | .00 | 4.6 |
| 3 | 1.0 | 6.6 | .14 | .00 | 2.4 | .00 | 31 | 1.0 | .00 | .00 | .00 | 1.3 |
| 4 | .50 | 2.6 | .02 | .20 | 3.4 | .00 | 5.2 | .24 | .00 | .00 | 1.1 | 1.0 |
| 5 | .20 | 2.0 | .00 | .03 | 2.2 | .00 | 1.4 | .00 | .00 | .00 | 315 | 10 |
| 6 | .00 | 1.8 | .00 | .14 | 1.2 | .00 | .58 | .07 | .00 | .00 | 88 | 50 |
| 7 | 1.0 | 1.1 | .00 | .10 | 1.2 | .00 | .03 | 33 | .00 | .00 | 15 | 25 |
| 8 | 3.0 | .88 | .00 | .05 | 1.0 | .00 | .00 | 181 | 1.7 | .00 | 5.0 | 15 |
| 9 | 5.0 | 2.4 | .00 | .03 | 1.0 | .00 | .00 | 75 | .67 | 15 | 2.0 | 9.4 |
| 10 | 6.5 | 9.4 | .00 | .01 | 2.0 | .00 | .00 | 16 | 66 | 2.9 | .50 | 318 |
| 11 | 6.6 | 27 | .00 | .00 | 5.0 | .00 | .00 | 3.4 | 242 | .38 | .20 | 91 |
| 12 | 6.5 | 7.1 | .00 | .00 | 7.5 | .00 | 20 | .93 | 27 | .00 | .00 | 23 |
| 13 | 6.3 | 2.7 | .00 | .00 | 11 | .00 | 15 | 1.2 | 12 | .00 | .00 | 6.7 |
| 14 | 6.0 | 1.7 | .00 | .00 | 7.3 | .00 | 9.0 | 1.3 | 7.8 | .00 | 100 | 13 |
| 15 | 6.0 | 1.2 | .03 | .00 | 4.7 | .00 | 7.0 | 545 | 6.8 | .00 | 50 | 8.7 |
| 16 | 6.1 | 1.1 | .06 | .00 | 3.1 | .00 | 3.3 | 549 | 4.2 | .01 | 30 | 5.3 |
| 17 | 6.5 | .87 | .05 | .00 | 3.9 | .00 | 1.4 | 200 | 3.2 | .00 | 20 | 2.5 |
| 18 | 6.5 | .51 | .05 | .00 | 12 | .00 | 1.0 | 77 | 2.2 | .00 | 15 | .54 |
| 19 | 6.3 | .31 | .00 | .00 | 14 | .00 | .97 | 43 | .84 | .00 | 10 | .00 |
| 20 | 6.0 | .19 | .00 | .21 | 7.2 | .00 | .42 | 22 | .16 | .00 | 7.0 | .00 |
| 21 | 6.4 | .00 | .00 | .22 | 1.8 | .00 | .67 | 15 | 18 | .07 | 3.8 | .00 |
| 22 | 9.3 | .00 | .00 | .97 | .50 | .00 | .65 | 10 | 4.9 | .00 | 334 | .00 |
| 23 | 11 | .02 | .00 | 1.9 | .12 | .00 | .28 | 8.0 | 3.1 | .00 | 69 | .00 |
| 24 | 9.2 | .04 | .01 | 1.9 | .00 | .00 | 8.5 | 4.9 | .60 | 1.3 | 9.2 | .00 |
| 25 | 10 | .15 | .00 | 1.9 | .00 | .00 | 61 | 2.4 | .00 | .12 | .15 | .00 |
| 26 | 9.3 | .04 | .00 | 1.8 | .00 | .00 | 92 | 1.8 | .00 | .97 | .00 | 1.0 |
| 27 | 7.1 | .00 | .00 | 1.2 | .00 | .00 | 54 | 1.7 | .00 | 1.1 | 320 | 37 |
| 28 | 7.1 | .00 | .00 | 1.0 | .00 | .00 | 23 | 2.4 | .00 | 3.1 | 488 | 19 |
| 29 | 7.1 | .00 | .00 | .50 | .00 | .00 | 9.5 | 1.4 | .00 | 4.4 | 129 | 13 |
| 30 | 16 | .01 | .00 | .60 | --- | .08 | 6.4 | .59 | .00 | 3.3 | 56 | 9.5 |
| 31 | 135 | --- | .08 | .75 | --- | .00 | --- | .45 | --- | 1.0 | 27 | --- |
| TOTAL | 313.50 | 182.72 | .82 | 13.51 | 94.19 | .08 | 352.31 | 1805.78 | 401.17 | 33.65 | 2094.95 | 676.54 |
| MEAN | 10.1 | 6.09 | .026 | .44 | 3.25 | .003 | 11.7 | 58.3 | 13.4 | 1.09 | 67.6 | 22.6 |
| MAX | 135 | 85 | .20 | 1.9 | 14 | .08 | 92 | 549 | 242 | 15 | 488 | 318 |
| MIN | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| AC-FT | 622 | 362 | 1.6 | 27 | 187 | .2 | 699 | 3580 | 796 | 67 | 4160 | 1340 |

CAL YR 1979 TOTAL 7703.06 MEAN 21.1 MAX 1450 MIN .00 AC-FT 15280
WTR YR 1980 TOTAL 5969.22 MEAN 16.3 MAX 549 MIN .00 AC-FT 11840

## 07227100 REVUELTO CREEK NEAR LOGAN, NM--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analysis: October 1959 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | OXYGEN, DIS-SOLVED (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | | | |
| 18... | 1155 | 6.5 | 1040 | 8.5 | 20.0 | 8.5 | 270 | 99 | 63 | 27 | 110 | 2.9 |
| NOV | | | | | | | | | | | | |
| 15... | 1325 | 1.2 | 1290 | 8.6 | 14.0 | 9.5 | 250 | 37 | 56 | 26 | 190 | 5.3 |
| DEC | | | | | | | | | | | | |
| 19... | 1155 | .01 | 3650 | 8.3 | 3.0 | 14.7 | 270 | 0 | 52 | 35 | 690 | 18 |
| JAN | | | | | | | | | | | | |
| 10... | 1205 | .01 | 3790 | 8.4 | 9.5 | 10.4 | 300 | 0 | 57 | 38 | 800 | 20 |
| FEB | | | | | | | | | | | | |
| 21... | 1345 | 1.6 | 2050 | 8.5 | 14.0 | 9.4 | 270 | 34 | 57 | 32 | 360 | 9.5 |
| MAR | | | | | | | | | | | | |
| 19... | 1147 | .01 | 5610 | 8.5 | 21.5 | 8.5 | 380 | 4 | 63 | 55 | 1100 | 24 |
| APR | | | | | | | | | | | | |
| 15... | 1230 | 6.0 | 2110 | 8.0 | 6.5 | -- | -- | -- | -- | -- | -- | -- |
| 16... | 1445 | 2.1 | 2100 | 8.7 | 21.0 | 7.9 | 450 | 250 | 87 | 57 | 350 | 7.2 |
| JUL | | | | | | | | | | | | |
| 09... | 1030 | 30 | 1120 | 7.7 | 27.0 | -- | 110 | 0 | 29 | 8.9 | 200 | 8.3 |
| AUG | | | | | | | | | | | | |
| 12... | 1415 | 8.0 | 1500 | 8.6 | 26.0 | 7.2 | 320 | 160 | 68 | 36 | 200 | 4.9 |
| SEP | | | | | | | | | | | | |
| 30... | 0930 | 8.9 | 1030 | 8.6 | 16.0 | -- | 220 | 50 | 50 | 23 | 140 | 4.1 |

| DATE | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) | PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | | | |
| 18... | 6.8 | 280 | 46 | .5 | 5.6 | -- | 641 | .01 | -- | 163 | 2.9 | -- |
| NOV | | | | | | | | | | | | |
| 15... | 3.9 | 320 | 100 | .5 | 6.7 | -- | 831 | .32 | -- | 71 | .23 | -- |
| DEC | | | | | | | | | | | | |
| 19... | 4.9 | 280 | 870 | .8 | 8.9 | -- | 2130 | .08 | -- | 47 | .00 | 46 |
| JAN | | | | | | | | | | | | |
| 10... | 4.7 | 280 | 1100 | .8 | 9.5 | -- | 2470 | .00 | -- | 20 | .00 | 96 |
| FEB | | | | | | | | | | | | |
| 21... | 3.7 | 450 | 270 | .7 | 10 | -- | 1330 | .61 | -- | 231 | 1.0 | 97 |
| MAR | | | | | | | | | | | | |
| 19... | 6.5 | 340 | 1400 | 1.0 | 8.9 | -- | 3200 | .02 | -- | 12 | .00 | 79 |
| APR | | | | | | | | | | | | |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 221 | 3.6 | -- |
| 16... | 6.3 | 770 | 150 | .8 | 6.1 | -- | 1550 | .02 | -- | 84 | .48 | -- |
| JUL | | | | | | | | | | | | |
| 09... | 5.4 | 290 | 38 | .6 | 13 | -- | 706 | .29 | -- | 27600 | 2240 | 94 |
| AUG | | | | | | | | | | | | |
| 12... | 10 | 410 | 130 | .6 | 9.2 | -- | 960 | .02 | -- | 39 | .84 | -- |
| SEP | | | | | | | | | | | | |
| 30... | 5.0 | 280 | 51 | .5 | 6.2 | 682 | 658 | .00 | .000 | 150 | 3.6 | 85 |

## 07227140 CANADIAN RIVER ABOVE NEW MEXICO-TEXAS STATE LINE, NM
(National stream-quality accounting network station)

LOCATION.--Lat 35°23'35", long 103°02'30", in SW1/4 sec. 32, T.14 N., R.37 E., Quay County, Hydrologic Unit 11080006, 0.1 mi (0.2 km) upstream from New Mexico-Texas State line, 5.5 mi (8.8 km) downstream from Rana Canyon and 14.7 mi (23.7 km) north of Glenrio.

DRAINAGE AREA.--12,616 mi² (32,675 km²).

PERIOD OF RECORD.--1969-73, 1975 to current year.

REMARKS.--Discharge measurements were made at the time water-quality samples were collected.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TURBIDITY (NTU) | OXYGEN, DISSOLVED (MG/L) | COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) | STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 18... | 0907 | 9.5 | 6750 | 8.4 | 13.5 | 12 | 9.6 | 73 | 160 | 530 |
| NOV 16... | 0840 | 22 | 5350 | 8.7 | 4.5 | 78 | 12.0 | 10 | 80 | 500 |
| DEC 19... | 0915 | 9.8 | 8540 | 8.4 | 2.0 | 23 | 11.9 | 1 | 26 | 680 |
| JAN 10... | 0840 | 14 | 9070 | 8.3 | 1.0 | 6.9 | 12.5 | 1 | 7 | 680 |
| FEB 21... | 0905 | 281 | 1180 | 8.4 | 6.0 | 320 | 11.3 | 0 | 120 | 180 |
| MAR 19... | 0921 | 6.4 | 8000 | 8.4 | 8.0 | 1.2 | 11.0 | 0 | 1 | 670 |
| APR 17... | 1130 | 8.7 | 8480 | 8.3 | 18.5 | 24 | 9.2 | 1 | 2 | 650 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 18... | 330 | 99 | 68 | 1300 | 25 | 11 | 410 | 2000 | .5 | 9.6 |
| NOV 16... | 250 | 110 | 55 | 1100 | 21 | 8.3 | 380 | 1600 | .6 | 9.8 |
| DEC 19... | 410 | 140 | 80 | 1700 | 28 | 11 | 410 | 2500 | .4 | 13 |
| JAN 10... | 380 | 140 | 80 | 1700 | 28 | 9.5 | 440 | 2500 | .5 | 12 |
| FEB 21... | 0 | 36 | 21 | 200 | 6.6 | 6.2 | 140 | 190 | 1.0 | 5.8 |
| MAR 19... | 430 | 130 | 83 | 1600 | 27 | 12 | 420 | 2500 | .5 | 9.5 |
| APR 17... | 410 | 130 | 80 | 1700 | 29 | 11 | 430 | 2500 | .6 | 11 |

| DATE | SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) | NITROGEN, AMMONIA TOTAL (MG/L AS N) | NITROGEN, AMMONIA DISSOLVED (MG/L AS N) | NITROGEN, ORGANIC TOTAL (MG/L AS N) | NITROGEN, ORGANIC DISSOLVED (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 18... | 4060 | 4020 | .03 | .04 | .020 | .040 | .45 | .35 | .47 | .39 |
| NOV 16... | 3390 | 3420 | .52 | .54 | .080 | .100 | .61 | .47 | .69 | .57 |
| DEC 19... | 4920 | 5020 | .51 | .50 | .060 | .070 | .71 | .60 | .77 | .67 |
| JAN 10... | 5400 | 5060 | .40 | .39 | .010 | .010 | .58 | .46 | .59 | .47 |
| FEB 21... | 734 | 727 | .14 | .13 | .060 | .060 | 1.3 | .65 | 1.4 | .71 |
| MAR 19... | 4870 | 4900 | .22 | .24 | .120 | .080 | .78 | .69 | .90 | .77 |
| APR 17... | 5380 | 5010 | .17 | .18 | .020 | .020 | .78 | .34 | .80 | .36 |

| DATE | PHOSPHORUS, TOTAL (MG/L AS P) | PHOSPHORUS, DISSOLVED (MG/L AS P) | PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | CARBON, ORGANIC DISSOLVED (MG/L AS C) | CARBON, ORGANIC SUSPENDED (MG/L AS C) | SEDIMENT, SUSPENDED (MG/L) | SEDIMENT DISCHARGE, SUSPENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|
| OCT 18... | .010 | .000 | .010 | 4.6 | 3.5 | .5 | 34 | .87 | 88 |
| NOV 16... | .060 | .010 | .010 | 15 | 15 | .1 | 134 | 8.1 | 83 |
| DEC 19... | .020 | .010 | .000 | -- | 4.5 | .2 | 44 | 1.2 | 80 |
| JAN 10... | .000 | .000 | .000 | 3.7 | 2.5 | -- | 27 | 1.0 | 72 |
| FEB 21... | .440 | .010 | .000 | 7.2 | 5.0 | 2.3 | 1210 | 918 | 77 |
| MAR 19... | .020 | .010 | .000 | -- | 6.7 | .1 | 22 | .38 | 55 |
| APR 17... | .050 | .060 | .080 | 7.7 | 4.1 | .3 | 26 | .61 | 83 |

07227140 CANADIAN RIVER ABOVE NEW MEXICO-TEXAS STATE LINE, NM--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUS-PENDED TOTAL (UG/L AS AS) | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) | BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) | CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 18... | 0907 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| NOV 16... | 0840 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DEC 19... | 0915 | 2 | 1 | 1 | 700 | 400 | 300 | 0 | 0 | 0 | 16 |
| JAN 10... | 0840 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FEB 21... | 0905 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 19... | 0921 | 2 | 1 | 1 | 300 | 100 | 200 | 0 | 0 | 0 | 10 |
| APR 17... | 1130 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) | COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) | COBALT, DIS-SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) | COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, TOTAL RECOV-ERABLE (UG/L AS FE) | IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 18... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 10 |
| NOV 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 20 |
| DEC 19... | 16 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 400 | 390 | 10 |
| JAN 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 30 |
| FEB 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 10 |
| MAR 19... | 0 | 10 | 2 | 2 | 0 | 3 | 3 | 0 | 150 | 130 | 20 |
| APR 17... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 40 |

| DATE | LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) | LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) | MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) | MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) | MERCURY DIS-SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) | NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 18... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| NOV 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DEC 19... | 2 | 2 | 0 | 130 | 0 | 130 | .1 | .1 | .0 | 5 | 5 |
| JAN 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FEB 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 19... | 3 | 3 | 0 | 130 | 10 | 120 | .0 | .0 | .1 | 2 | 2 |
| APR 17... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | NICKEL, DIS-SOLVED (UG/L AS NI) | SELE-NIUM, TOTAL (UG/L AS SE) | SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) | SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) | ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 18... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| NOV 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DEC 19... | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 40 | 40 | 0 |
| JAN 10... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| FEB 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 19... | 0 | [illegible] | 0 | 1 | 0 | 0 | 0 | 20 | 10 | 10 |
| APR 17... | -- | [illegible] | -- | -- | 0 | -- | -- | -- | -- | -- |

## 07227500 CANADIAN RIVER NEAR AMARILLO, TX

**LOCATION.**--Lat 35°28'13", long 101°52'45", Potter County, Hydrologic Unit 11090105, on left bank at downstream side of southbound lane of bridge on U.S. Highways 87 and 287, 1,500 ft (460 m) downstream from Pitcher Creek, 1.4 mi (2.3 km) downstream from East Amarillo Creek, 1.7 mi (2.7 km) downstream from Panhandle and Santa Fe Railway Co. bridge, 19 mi (31 km) north of Amarillo, and 537.7 mi (865.2 km) upstream from mouth.

**DRAINAGE AREA.**--19,445 mi² (50,362 km²), of which 4,069 mi² (10,539 km²) probably is noncontributing.

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--January 1924 to December 1925, January 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

**REVISED RECORDS.**--WSP 1341: Drainage area.

**GAGE.**--Water-stage recorder. Datum of gage is 2,989.16 ft (911.096 m) National Geodetic Vertical Datum of 1929. Jan. 16, 1924, to Dec. 31, 1925, and Apr. 3 to June 1, 1938, nonrecording gage at site of old bridge 20 ft (6 m) upstream at same datum. June 2 to Dec. 5, 1938, nonrecording gage at present site and datum.

**REMARKS.**--Water-discharge records poor. At times, low flow is maintained by release of sewage effluent from the Amarillo disposal plant into East Amarillo Creek, a tributary to the Canadian River. Some regulation by Conchas and Ute Reservoirs in New Mexico, total capacity 439,700 acre-ft (542 hm³). Conchas Canal and Bell Ranch Canal divert from Conchas Reservoir for irrigation.

**AVERAGE DISCHARGE.**--43 years (water years 1925, 1939-80), 336 ft³/s (9.516 m³/s), 243,400 acre-ft/yr (300 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 135,000 ft³/s (3,820 m³/s) July 25, 1941, gage height, 15.7 ft (4.79 m), from rating curve extended above 100,000 ft³/s (2,830 m³/s); no flow at times January 1924 to December 1925 and Aug. 7, 8, 1940.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood in May 1914 reached a stage of 24 ft (7.3 m); a higher stage probably occurred during flood in October 1904, from information by local resident.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 5,940 ft³/s (168 m³/s) June 11 at 0815 hours, gage height, 5.50 ft (1.676 m), no peak above base of 14,000 ft³/s (396 m³/s); minimum daily observed, 0.02 ft³/s (0.001 m³/s) July 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.5 | 9.2 | 16 | 14 | 15 | 41 | 20 | 755 | 159 | 2.7 | .07 | 39 |
| 2 | 2.3 | 7.1 | 17 | 15 | 22 | 30 | 17 | 201 | 105 | 3.3 | .10 | 29 |
| 3 | 2.3 | 5.3 | 17 | 14 | 27 | 30 | 32 | 138 | 73 | 5.8 | .09 | 17 |
| 4 | 1.7 | 4.2 | 20 | 12 | 44 | 35 | 24 | 114 | 67 | 2.9 | .03 | 8.6 |
| 5 | 1.2 | 16 | 17 | 12 | 30 | 36 | 19 | 47 | 77 | 2.3 | .14 | 2.8 |
| 6 | .84 | 287 | 17 | 10 | 27 | 32 | 12 | 35 | 56 | 3.8 | 101 | 2.3 |
| 7 | .73 | 334 | 18 | 9.2 | 24 | 28 | 6.8 | 30 | 29 | 2.1 | 1.9 | 6.2 |
| 8 | .63 | 360 | 17 | 9.8 | 22 | 23 | 3.9 | 44 | 25 | 2.8 | 1.3 | 9.2 |
| 9 | .63 | 295 | 16 | 7.8 | 60 | 21 | 2.6 | 131 | 26 | 2.4 | .59 | 3.3 |
| 10 | .63 | 229 | 16 | 9.5 | 500 | 20 | 2.2 | 67 | 38 | 1.8 | 9.8 | 3.9 |
| 11 | .63 | 195 | 17 | 9.4 | 396 | 21 | 2.0 | 52 | 1580 | 1.4 | 5.0 | 5.7 |
| 12 | .63 | 161 | 16 | 10 | 339 | 22 | 1.6 | 93 | 258 | 1.2 | 2.5 | 4.6 |
| 13 | .63 | 136 | 15 | 10 | 376 | 17 | 1.3 | 64 | 76 | .82 | 1.0 | 412 |
| 14 | .54 | 93 | 15 | 11 | 408 | 14 | 1.1 | 66 | 33 | .56 | 5.0 | 492 |
| 15 | .63 | 78 | 15 | 181 | 441 | 11 | .93 | 1270 | 19 | .38 | 155 | 96 |
| 16 | .63 | 68 | 14 | 354 | 460 | 8.1 | .68 | 819 | 15 | 1.4 | 1570 | 51 |
| 17 | .63 | 51 | 12 | 482 | 521 | 7.1 | .45 | 972 | 12 | .61 | 564 | 34 |
| 18 | .73 | 36 | 13 | 484 | 597 | 5.8 | .46 | 611 | 9.3 | .48 | 180 | 27 |
| 19 | .54 | 27 | 14 | 341 | 493 | 4.8 | .38 | 510 | 7.0 | .37 | 77 | 7.1 |
| 20 | .38 | 20 | 15 | 148 | 448 | 4.6 | .29 | 315 | 6.6 | .45 | 46 | 1.2 |
| 21 | .46 | 14 | 16 | 118 | 477 | 4.4 | .27 | 250 | 157 | 1.3 | 44 | .46 |
| 22 | .54 | 13 | 15 | 109 | 435 | 3.1 | .28 | 207 | 371 | .19 | 36 | .46 |
| 23 | .54 | 16 | 15 | 92 | 387 | 8.5 | .31 | 160 | 139 | .20 | 29 | .54 |
| 24 | .54 | 15 | 15 | 69 | 396 | 6.9 | 3.2 | 123 | 69 | .13 | 22 | .63 |
| 25 | .63 | 16 | 16 | 48 | 206 | 6.4 | 20 | 93 | 26 | .17 | 13 | .73 |
| 26 | .63 | 16 | 15 | 32 | 136 | 6.7 | 94 | 89 | 14 | .21 | 13 | 2.8 |
| 27 | .63 | 16 | 14 | 16 | 99 | 330 | 103 | 102 | 6.2 | .16 | 14 | 6.2 |
| 28 | .73 | 15 | 13 | 14 | 78 | 338 | 54 | 295 | 3.9 | .17 | 11 | 4.2 |
| 29 | .84 | 14 | 14 | 14 | 57 | 88 | 44 | 302 | 3.4 | .14 | 8.0 | 1.2 |
| 30 | 21 | 15 | 16 | 14 | --- | 50 | 63 | 333 | 3.6 | .02 | 33 | .95 |
| 31 | 15 | --- | 13 | 15 | --- | 30 | --- | 229 | --- | .03 | 51 | --- |
| TOTAL | 60.97 | 2561.8 | 479 | 2684.7 | 7521 | 1283.4 | 530.75 | 8517 | 3464.0 | 40.29 | 2994.52 | 1270.07 |
| MEAN | 1.97 | 85.4 | 15.5 | 86.6 | 259 | 41.4 | 17.7 | 275 | 115 | 1.30 | 96.6 | 42.3 |
| MAX | 21 | 360 | 20 | 484 | 597 | 338 | 103 | 1270 | 1580 | 5.8 | 1570 | 492 |
| MIN | .38 | 4.2 | 12 | 7.8 | 15 | 3.1 | .27 | 30 | 3.4 | .02 | .03 | .46 |
| AC-FT | 121 | 5080 | 950 | 5330 | 14920 | 2550 | 1050 | 16890 | 6870 | 80 | 5940 | 2520 |

CAL YR 1979 TOTAL 23454.06 MEAN 64.3 MAX 3360 MIN .38 AC-FT 46520
WTR YR 1980 TOTAL 31407.50 MEAN 85.8 MAX 1580 MIN .02 AC-FT 62300

## 07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1948 to October 1949, February 1950 to current year. Chemical and biochemical analyses: January 1969 to current year. Pesticide analyses: October 1968 to current year.

PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: October 1950 to current year.
WATER TEMPERATURES: August 1949 to current year.
SUSPENDED SEDIMENT DISCHARGE: August 1949 to September 1952.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 6,540 micromhos Dec. 10, 1978; minimum daily, 346 micromhos Oct. 29, 1964.
WATER TEMPERATURES (1949-76): Maximum daily, 39.0°C July 7, 1973; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 6,350 micromhos July 8; minimum daily, 390 micromhos Aug. 16.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 29... | 1230 | .84 | 1950 | 8.3 | 20.5 | 10 | 4.6 | 12.1 | 156 | 3.6 | 430 | 250 |
| NOV 23... | 1135 | 17 | 4080 | -- | 1.0 | -- | -- | -- | -- | -- | 650 | 440 |
| DEC 20... | 1015 | 14 | 3900 | 8.0 | .0 | 5 | -- | 15.5 | 120 | 6.0 | 710 | 530 |
| JAN 31... | 0815 | 15 | 4690 | -- | 3.0 | -- | -- | -- | -- | -- | 770 | 520 |
| FEB 28... | 1400 | 78 | 2380 | 8.5 | 15.5 | 0 | 240 | 14.2 | 161 | .9 | 350 | 99 |
| MAR 27... | 0815 | 6.7 | 4520 | -- | 10.0 | -- | -- | -- | -- | -- | 780 | 610 |
| APR 25... | 1200 | 26 | 2400 | 7.9 | 9.0 | 5 | 8400 | 13.2 | 129 | 5.1 | 250 | 120 |
| JUN 26... | 1630 | 14 | 1700 | 8.5 | 32.0 | 20 | 27 | 9.3 | 141 | 3.6 | 280 | 140 |
| JUL 31... | 0730 | .03 | 5100 | -- | 22.0 | -- | -- | -- | -- | -- | 720 | 630 |
| AUG 18... | 1230 | 180 | 1190 | 8.1 | 25.5 | 60 | 20 | 8.9 | 120 | 6.7 | 96 | 0 |

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 29... | 120 | 32 | 240 | 5.0 | 4.0 | 220 | 0 | 260 | 360 | .5 | 21 | 1150 |
| NOV 23... | 160 | 60 | 650 | 11 | 8.6 | 250 | 0 | 580 | 830 | .6 | 13 | 2430 |
| DEC 20... | 190 | 58 | 570 | 9.3 | 7.4 | 230 | 0 | 570 | 850 | .4 | 16 | 2380 |
| JAN 31... | 190 | 72 | 740 | 12 | 8.8 | 310 | 0 | 620 | 1100 | .7 | 15 | 2900 |
| FEB 28... | 79 | 38 | 380 | 8.8 | 7.2 | 270 | 20 | 330 | 430 | .7 | 10 | 1430 |
| MAR 27... | 200 | 67 | 690 | 11 | 7.6 | 200 | 0 | 670 | 950 | .7 | 15 | 2700 |
| APR 25... | 65 | 22 | 390 | 11 | 4.2 | 160 | 0 | 360 | 450 | .5 | 8.6 | 1380 |
| JUN 26... | 74 | 23 | 250 | 6.5 | 8.3 | 160 | 6 | 200 | 330 | .6 | 9.3 | 980 |
| JUL 31... | 180 | 65 | 770 | 13 | 5.6 | 110 | 0 | 490 | 1300 | .5 | 15 | 2880 |
| AUG 18... | 24 | 8.8 | 210 | 9.3 | 6.1 | 160 | 0 | 140 | 210 | .6 | 20 | 699 |

## 07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) | SOLIDS, VOLA-TILE, SUS-PENDED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 29... | 30 | 28 | .15 | .02 | .17 | .09 | .23 | .32 | .010 | 16 | .20 |
| NOV 23... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DEC 20... | 25 | 8 | .15 | .03 | .18 | 1.7 | .70 | 2.4 | .400 | 7.7 | .10 |
| JAN 31... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FEB 28... | 298 | 84 | .17 | .00 | .17 | .00 | .80 | .80 | .190 | 5.3 | -- |
| MAR 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| APR 25... | 1760 | 600 | .60 | .02 | .62 | .20 | 8.4 | 8.6 | 3.600 | 35 | .00 |
| JUN 26... | 246 | 6 | .00 | .00 | .00 | .00 | 1.2 | 1.2 | .030 | 11 | .00 |
| JUL 31... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| AUG 18... | 15300 | 1230 | 1.9 | .21 | 2.1 | .95 | .15 | 1.1 | 4.700 | 81 | .00 |

| DATE | TIME | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| OCT 29... | 1230 | 2 | 300 | 1 | 0 | 0 | <10 |
| DEC 20... | 1015 | -- | -- | -- | -- | -- | -- |
| FEB 28... | 1400 | 3 | 100 | 0 | 0 | 0 | 0 |
| JUN 26... | 1630 | 5 | 200 | <1 | 10 | 4 | <10 |
| AUG 18... | 1230 | 5 | 100 | 0 | 0 | 11 | 200 |

| DATE | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY DIS-SOLVED (UG/L AS HG) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| OCT 29... | 0 | <1 | .4 | 0 | 0 | <3 |
| DEC 20... | -- | -- | -- | -- | 0 | -- |
| FEB 28... | 0 | 20 | .1 | 1 | 0 | 0 |
| JUN 26... | 1 | 3 | .0 | 0 | 0 | <3 |
| AUG 18... | 3 | 20 | .1 | 1 | 0 | 20 |

| DATE | TIME | PCB, TOTAL (UG/L) | PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | CHLOR-DANE, TOTAL (UG/L) | CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| FEB 28... | 1400 | .0 | 0 | .00 | .00 | .0 | .0 | 0 | .00 | .0 |

| DATE | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | DI-AZINON, TOTAL (UG/L) | DI-ELDRIN TOTAL (UG/L) | DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | ENDO-SULFAN, TOTAL (UG/L) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| FEB 28... | .00 | .0 | .00 | .0 | .00 | .00 | .0 | .00 | .00 | .0 |

## 07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | ETHION, TOTAL (UG/L) | HEPTA-CHLOR, TOTAL (UG/L) | HEPTA-CHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) | HEPTA-CHLOR EPOXIDE TOTAL (UG/L) | HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) | MALA-THION, TOTAL (UG/L) | METH-OXY-CHLOR, TOTAL (UG/L) | METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| FEB 28... | .00 | .00 | .0 | .00 | .0 | .00 | .0 | .00 | .00 | .0 |

| DATE | METHYL PARA-THION, TOTAL (UG/L) | METHYL TRI-THION, TOTAL (UG/L) | MIREX, TOTAL (UG/L) | PARA-THION, TOTAL (UG/L) | TOX-APHENE, TOTAL (UG/L) | TOXA-PHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) | TOTAL TRI-THION (UG/L) | 2,4-D, TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) | SILVEX, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| FEB 28... | .00 | .00 | .00 | .00 | 0 | 0 | .00 | .00 | .00 | .00 |

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | TEMPER-ATURE, WATER (DEG C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) |
|---|---|---|---|---|---|
| DEC 20... | 1015 | 14 | .0 | 20 | .76 |
| AUG 18... | 1230 | 180 | 25.5 | 17700 | 8600 |

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 60.97 | 1310 | 759 | 125 | 220 | 37 | 170 | 28 | 220 |
| NOV. | 1979 | 2561.8 | 1860 | 1090 | 7530 | 340 | 2320 | 250 | 1730 | 310 |
| DEC. | 1979 | 479 | 3580 | 2150 | 2790 | 730 | 950 | 510 | 658 | 590 |
| JAN. | 1980 | 2684.7 | 2340 | 1380 | 10000 | 440 | 3210 | 320 | 2330 | 390 |
| FEB. | 1980 | 7521 | 1830 | 1070 | 21700 | 330 | 6640 | 240 | 4970 | 300 |
| MAR. | 1980 | 1283.4 | 2710 | 1620 | 5610 | 530 | 1850 | 380 | 1310 | 450 |
| APR. | 1980 | 530.75 | 2550 | 1510 | 2160 | 490 | 697 | 350 | 503 | 420 |
| MAY | 1980 | 8517 | 1710 | 1000 | 23100 | 310 | 7070 | 230 | 5280 | 280 |
| JUNE | 1980 | 3464.0 | 985 | 570 | 5330 | 170 | 1570 | 130 | 1210 | 160 |
| JULY | 1980 | 40.29 | 4040 | 2470 | 268 | 880 | 96 | 590 | 64 | 660 |
| AUG. | 1980 | 2994.52 | 884 | 512 | 4140 | 150 | 1220 | 120 | 937 | 150 |
| SEPT | 1980 | 1270.07 | 1360 | 793 | 2720 | 240 | 819 | 180 | 620 | 220 |
| TOTAL | | 31407.50 | ** | ** | 85500 | ** | 26500 | ** | 19600 | ** |
| WTD. AVG. | | 86 | 1720 | 1010 | ** | 310 | ** | 230 | ** | 280 |

## 07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2290 | 1400 | 3930 | 3830 | 4610 | 2630 | 3290 | 1440 | 1850 | 3060 | 4080 | 2000 |
| 2 | 1710 | 2040 | 3900 | 3900 | 4400 | 2870 | 3650 | 2140 | 2010 | 3490 | 3120 | 1750 |
| 3 | 1750 | 2610 | 3760 | 3970 | 4000 | 3160 | 2590 | 2300 | 2340 | 3930 | 2340 | 2140 |
| 4 | 1790 | 2740 | 3720 | 4050 | 3300 | 3310 | 3200 | 2510 | 2550 | 3090 | 2860 | 2520 |
| 5 | 1840 | 2370 | 3360 | 4120 | 3740 | 3460 | 3310 | 3280 | 2670 | 4670 | 2640 | 2900 |
| 6 | 2270 | 1930 | 3710 | 4190 | 4150 | 3680 | 3360 | 3300 | 2090 | 3290 | 1050 | 3250 |
| 7 | 2340 | 1670 | 3580 | 4270 | 4130 | 3950 | 4240 | 3320 | 1560 | 5650 | 1180 | 3960 |
| 8 | 2350 | 1590 | 3420 | 4310 | 4350 | 4090 | 4310 | 3330 | 1390 | 6350 | 1430 | 2240 |
| 9 | 2200 | 1430 | 3280 | 4560 | 4400 | 4230 | 4370 | 2300 | 1530 | 5880 | 1570 | 2560 |
| 10 | 2110 | 1470 | 3130 | 4720 | 2200 | 4280 | 4440 | 2060 | 1540 | 5260 | 1280 | 3190 |
| 11 | 2090 | 1510 | 2990 | 4580 | 1970 | 4250 | 4510 | 3100 | 400 | 4780 | 2590 | 4390 |
| 12 | 2050 | 1600 | 3430 | 4640 | 2150 | 4190 | 4580 | 3560 | 750 | 4110 | 3030 | 4470 |
| 13 | 2040 | 1640 | 3860 | 4700 | 2070 | 4200 | 4640 | 3700 | 983 | 3030 | 3150 | 1150 |
| 14 | 2000 | 1810 | 3450 | 4780 | 1670 | 4220 | 4710 | 3600 | 1260 | 2540 | 2480 | 900 |
| 15 | 1970 | 2000 | 3550 | 3550 | 1650 | 4510 | 4510 | 750 | 1520 | 2610 | 1750 | 1620 |
| 16 | 1930 | 2260 | 2890 | 2250 | 1640 | 4410 | 4050 | 1110 | 2080 | 4020 | 390 | 1780 |
| 17 | 1910 | 2480 | 3830 | 1960 | 1620 | 4580 | 3660 | 1750 | 2430 | 4070 | 900 | 2130 |
| 18 | 1920 | 2880 | 3810 | 1790 | 1550 | 5230 | 3370 | 1800 | 2450 | 3440 | 1350 | 2570 |
| 19 | 1820 | 3150 | 3780 | 1770 | 1580 | 5000 | 3060 | 1700 | 2460 | 2890 | 1500 | 3120 |
| 20 | 1450 | 3360 | 3770 | 1960 | 1590 | 4750 | 2820 | 1680 | 2520 | 2550 | 1530 | 3700 |
| 21 | 1550 | 3540 | 3600 | 2140 | 1600 | 4960 | 2690 | 1780 | 1590 | 2130 | 1510 | 3740 |
| 22 | 1600 | 3760 | 3960 | 2320 | 1610 | 5210 | 3440 | 1720 | 850 | 2080 | 1450 | 3420 |
| 23 | 1650 | 3940 | 3730 | 2510 | 1630 | 4880 | 3340 | 2160 | 1300 | 2070 | 1900 | 3530 |
| 24 | 1710 | 4010 | 3570 | 2700 | 1650 | 4850 | 2580 | 2640 | 1750 | 2460 | 2170 | 3710 |
| 25 | 1760 | 3900 | 3330 | 2880 | 1660 | 5160 | 2400 | 3090 | 1930 | 2380 | 2530 | 3940 |
| 26 | 1740 | 4090 | 3450 | 3350 | 1800 | 5010 | 2150 | 3550 | 1710 | 2250 | 3340 | 4560 |
| 27 | 1760 | 4240 | 3520 | 3840 | 1970 | 1980 | 1990 | 3240 | 1910 | 2140 | 4090 | 5250 |
| 28 | 1780 | 4160 | 3580 | 4150 | 2200 | 2000 | 2270 | 2100 | 1930 | 2160 | 4830 | 5120 |
| 29 | 1670 | 4040 | 3610 | 4420 | 2440 | 2520 | 2310 | 1720 | 2010 | 3240 | 4910 | 4920 |
| 30 | 869 | 3930 | 3650 | 4710 | --- | 2700 | 2630 | 1450 | 2650 | 4360 | 3040 | 2770 |
| 31 | 925 | --- | 3860 | 4690 | --- | 2850 | --- | 2070 | --- | 5100 | 2300 | --- |
| MEAN | 1830 | 2720 | 3580 | 3600 | 2530 | 3970 | 3420 | 2400 | 1800 | 3520 | 2330 | 3110 |

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 17.0 | --- | 3.0 | 8.0 | --- | --- | 19.0 | 16.0 | 27.0 | --- | --- | --- |
| 2 | 12.0 | --- | 7.0 | 10.0 | --- | --- | 9.0 | 17.0 | 29.0 | --- | --- | 29.0 |
| 3 | --- | 5.0 | 9.0 | --- | --- | --- | 17.0 | 22.0 | --- | 22.0 | 22.0 | --- |
| 4 | --- | 7.0 | 11.0 | --- | --- | 15.0 | 18.0 | 23.0 | --- | 22.0 | 21.0 | --- |
| 5 | 15.0 | 9.0 | 13.0 | --- | 14.0 | 14.0 | 21.0 | 25.0 | 21.0 | 21.0 | 33.0 | 20.0 |
| 6 | 14.0 | 6.0 | 9.0 | --- | 11.0 | 15.0 | 20.0 | --- | 20.0 | 21.0 | --- | 21.0 |
| 7 | 15.0 | 9.0 | --- | --- | 6.0 | 15.0 | 21.0 | --- | --- | 21.0 | 22.0 | 20.0 |
| 8 | 15.0 | 12.0 | --- | 16.0 | --- | 17.0 | --- | 16.0 | 19.0 | 21.0 | 21.0 | 20.0 |
| 9 | 9.0 | --- | --- | 14.0 | 3.0 | 18.0 | --- | 11.0 | 17.0 | --- | --- | 21.0 |
| 10 | 8.0 | --- | --- | 17.0 | 1.0 | 17.0 | --- | 12.0 | 19.0 | --- | 22.0 | 16.0 |
| 11 | 13.0 | --- | 6.0 | 10.0 | 4.0 | --- | --- | 16.0 | --- | 23.0 | 22.0 | 18.0 |
| 12 | --- | --- | 6.0 | 14.0 | --- | --- | --- | 16.0 | --- | 23.0 | 19.0 | --- |
| 13 | --- | 13.0 | 4.0 | 18.0 | --- | --- | --- | 22.0 | 21.0 | 22.0 | 22.0 | --- |
| 14 | --- | 12.0 | 11.0 | 15.0 | 5.0 | 6.0 | 21.0 | --- | 23.0 | 22.0 | 23.0 | --- |
| 15 | --- | 12.0 | 18.0 | --- | --- | 16.0 | 25.0 | --- | 19.0 | 23.0 | --- | --- |
| 16 | 24.0 | 16.0 | 4.0 | --- | --- | 9.0 | --- | 12.0 | 22.0 | 23.0 | --- | 25.0 |
| 17 | 17.0 | 17.0 | 11.0 | 16.0 | 2.0 | 15.0 | --- | 13.0 | 21.0 | 22.0 | --- | 26.0 |
| 18 | 20.0 | 17.0 | --- | 10.0 | 1.0 | 13.0 | 9.0 | 14.0 | 23.0 | --- | --- | 29.0 |
| 19 | 20.0 | 17.0 | --- | 5.0 | 7.0 | --- | 12.0 | 16.0 | 21.0 | --- | 28.0 | 29.0 |
| 20 | 23.0 | --- | 16.0 | --- | --- | --- | 12.0 | 17.0 | --- | --- | 31.0 | 30.0 |
| 21 | 16.0 | --- | 16.0 | --- | --- | --- | 13.0 | 18.0 | --- | --- | --- | 30.0 |
| 22 | --- | 10.0 | 10.0 | --- | 7.0 | --- | 14.0 | 17.0 | --- | 35.0 | 31.0 | 24.0 |
| 23 | --- | 3.0 | 8.0 | --- | --- | --- | 16.0 | --- | --- | 36.0 | 29.0 | --- |
| 24 | --- | 9.0 | 5.0 | --- | 8.0 | 3.0 | 15.0 | --- | --- | 34.0 | 31.0 | --- |
| 25 | 25.0 | 4.0 | 6.0 | 8.0 | 6.0 | 6.0 | --- | --- | 32.0 | 34.0 | 31.0 | --- |
| 26 | 28.0 | 4.0 | --- | --- | 5.0 | 7.0 | --- | --- | 33.0 | 36.0 | --- | --- |
| 27 | 20.0 | 2.0 | --- | 4.0 | 6.0 | 10.0 | --- | 27.0 | 33.0 | 37.0 | --- | 17.0 |
| 28 | 21.0 | --- | --- | 6.0 | 7.0 | --- | --- | 26.0 | 35.0 | 36.0 | 19.0 | 26.0 |
| 29 | 23.0 | --- | 6.0 | --- | --- | --- | 28.0 | 29.0 | 31.0 | --- | 19.0 | 17.0 |
| 30 | 6.0 | 2.0 | 5.0 | 3.0 | --- | --- | 22.0 | 27.0 | 33.0 | --- | 19.0 | 18.0 |
| 31 | --- | --- | 7.0 | 3.0 | --- | --- | --- | 30.0 | --- | 22.0 | 20.0 | --- |
| MEAN | 17.0 | 9.5 | 8.5 | 10.5 | 6.0 | 12.5 | 17.5 | 19.0 | 25.0 | 26.5 | 24.5 | 23.0 |

WTR YR 1980 MEAN 17.0 MAX 37.0 MIN 1.0

## 07227900 LAKE MEREDITH NEAR SANFORD, TX

LOCATION.--Lat 35°42'38", long 101°33'03", Hutchinson County, Hydrologic Unit 11090106, in outlet tower near right end of dam on Canadian River, 1.2 mi (1.9 km) northwest of Sanford, and 508.5 mi (818.2 km) upstream from mouth.

DRAINAGE AREA.--20,220 $mi^2$ (52,370 $km^2$), of which 4,172 $mi^2$ (10,805 $km^2$) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Aug. 16, 1965, nonrecording gage read daily at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 6,410 ft (1,954 m) long. The dam was completed and storage began in October 1964. The service spillway is an uncontrolled concrete drop inlet located near the left end of dam. The spillway discharges into a 22-foot-diameter (7 m) conduit that is designed to discharge 19,300 $ft^3/s$ (547 $m^3/s$) at an elevation of 3,004.9 ft (915.89 m). The flood-control outlet works consists of three 12- by 15-foot (4 by 5 m) gates that open into three 15.5-foot (4.7 m) concrete conduits. The flood-control works are located just to the left of the service spillway near the left end of dam. The dam was built by the U.S. Bureau of Reclamation for the Canadian River Municipal Water Authority for flood control, municipal, and industrial supply for the cities of Amarillo, Borger, Brownfield, Lamesa, Levelland, Lubbock, O'Donnell, Pampa, Plainview, Slaton, and Tahoka. The area-capacity curves are based on Geological Survey topographic maps dated 1953. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 3,011.0 | - |
| Design flood | 3,004.9 | 2,434,200 |
| Crest of drop inlet | 2,965.0 | 1,407,600 |
| Top of conservation pool | 2,936.5 | 864,400 |
| Crest of flood-control outlet works (invert) | 2,894.0 | 313,700 |
| Lowest gated outlet (invert) | 2,850.0 | 43,050 |

COOPERATION.--Record of elevations and diversions furnished by the Canadian River Municipal Water Authority. The area-capacity curves were furnished by the U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 546,100 acre-ft (673 $hm^3$) Apr. 28, 1973, elevation, 2,914.91 ft (888.465 m); minimum since first appreciable storage, 219,900 acre-ft (271 $hm^3$) Apr. 10, 11, 1967, elevation, 2,883.10 ft (878.769 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 289,700 acre-ft (357 $hm^3$) Oct. 1, elevation, 2,891.41 ft (881.302 m); minimum, 223,700 acre-ft (276 $hm^3$) Sept. 30, elevation, 2,883.59 ft (878.918 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | | | |
|---|---|---|---|---|---|
| 2,883.0 | 219,200 | 2,886.0 | 242,900 | 2,889.0 | 268,300 |
| 2,884.0 | 226,900 | 2,887.0 | 251,200 | 2,890.0 | 277,000 |
| 2,885.0 | 234,800 | 2,888.0 | 259,700 | 2,891.0 | 286,000 |
| | | | | 2,892.0 | 295,100 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 289700 | 278200 | 274400 | 268400 | 266300 | 270900 | 267600 | 261700 | 266000 | 261700 | 244000 | 235300 |
| 2 | 289200 | 277900 | 274200 | 268300 | 266100 | 271200 | 267700 | 261900 | 265700 | 261600 | 243400 | 234900 |
| 3 | 288500 | 277700 | 273800 | 268200 | 266000 | 270700 | 267400 | 261900 | 265300 | 260500 | 243000 | 234400 |
| 4 | 288200 | 277400 | 273700 | 268000 | 265900 | 270300 | 267100 | 261900 | 264700 | 259800 | 242200 | 234000 |
| 5 | 287500 | 277000 | 273500 | 267800 | 265900 | 270500 | 267200 | 261800 | 264600 | 259200 | 241800 | 233500 |
| 6 | 287100 | 277100 | 273000 | 267600 | 265700 | 270100 | 266600 | 261700 | 264100 | 258600 | 241600 | 233100 |
| 7 | 286800 | 277400 | 272700 | 267100 | 266400 | 270100 | 266600 | 261500 | 263500 | 258000 | 241200 | 232600 |
| 8 | 285100 | 277300 | 272600 | 266800 | 266200 | 270100 | 266000 | 261400 | 263200 | 257300 | 240500 | 232100 |
| 9 | 285700 | 277500 | 272400 | 266900 | 266100 | 269500 | 265900 | 261800 | 262800 | 256800 | 240000 | 231500 |
| 10 | 285100 | 277500 | 272600 | 266200 | 265900 | 269200 | 265100 | 261300 | 265600 | 256300 | 239400 | 231400 |
| 11 | 284700 | 277500 | 272000 | 266200 | 266400 | 269300 | 265000 | 261000 | 268400 | 255700 | 239000 | 231300 |
| 12 | 284200 | 277500 | 272000 | 266000 | 266900 | 269100 | 264800 | 260800 | 269000 | 255000 | 238400 | 230600 |
| 13 | 284000 | 277500 | 271600 | 265800 | 267300 | 268600 | 264500 | 260400 | 268900 | 254500 | 237800 | 230200 |
| 14 | 283400 | 277500 | 271600 | 265700 | 267600 | 268400 | 264200 | 260200 | 268800 | 253900 | 238500 | 230000 |
| 15 | 283000 | 278400 | 271200 | 265800 | 268100 | 267900 | 263800 | 261400 | 267800 | 253200 | 238600 | 229700 |
| 16 | 282200 | 278200 | 270800 | 265900 | 268400 | 267100 | 263400 | 263600 | 267400 | 252500 | 239800 | 228800 |
| 17 | 282300 | 278200 | 269900 | 266000 | 268400 | 267500 | 263200 | 265200 | 267300 | 252000 | 241200 | 228700 |
| 18 | 282000 | 277800 | 270300 | 266700 | 268900 | 267100 | 262900 | 265500 | 265900 | 251100 | 241200 | 228300 |
| 19 | 281700 | 277600 | 270100 | 266800 | 269400 | 266900 | 262700 | 266000 | 266400 | 250600 | 241100 | 228300 |
| 20 | 281100 | 277400 | 270000 | 267500 | 270400 | 266600 | 262400 | 266300 | 266200 | 249800 | 240500 | 227400 |
| 21 | 280300 | 277000 | 269800 | 267500 | 270300 | 266200 | 261900 | 266300 | 265500 | 249200 | 240200 | 226900 |
| 22 | 280100 | 276600 | 269600 | 267500 | 270600 | 265700 | 261600 | 266200 | 265800 | 248900 | 239800 | 226300 |
| 23 | 279600 | 276300 | 269500 | 267400 | 271200 | 265900 | 261500 | 266000 | 265900 | 248300 | 239500 | 225900 |
| 24 | 279200 | 276100 | 269400 | 267500 | 271400 | 265600 | 261800 | 265900 | 265400 | 247700 | 239000 | 225300 |
| 25 | 278800 | 275700 | 269400 | 267500 | 271500 | 265700 | 261500 | 265500 | 264900 | 247200 | 238400 | 224800 |
| 26 | 278500 | 275600 | 269400 | 267400 | 271400 | 265000 | 261000 | 265100 | 264500 | 246500 | 238000 | 224700 |
| 27 | 278000 | 275600 | 269100 | 267200 | 271400 | 267400 | 261000 | 265700 | 264000 | 246800 | 237500 | 224300 |
| 28 | 277700 | 275400 | 269000 | 266900 | 271200 | 267200 | 260400 | 265700 | 263100 | 246300 | 237100 | 224000 |
| 29 | 277100 | 275000 | 268800 | 266900 | 270800 | 268200 | 260500 | 265900 | 262800 | 245700 | 236500 | 223900 |
| 30 | 278700 | 274800 | 268500 | 266700 | --- | 268100 | 260100 | 265900 | 262200 | 245000 | 236200 | 223700 |
| 31 | 278400 | --- | 268400 | 266500 | --- | 269300 | --- | 266300 | --- | 244500 | 235800 | --- |
| MAX | 289700 | 278400 | 274400 | 268400 | 271500 | 271200 | 267700 | 266300 | 269000 | 261700 | 244000 | 235300 |
| MIN | 277100 | 274800 | 268400 | 265700 | 265700 | 265000 | 260100 | 260200 | 262200 | 244500 | 235800 | 223700 |
| (†) | 2890.15 | 2889.74 | 2889.01 | 2888.79 | 2889.29 | 2889.12 | 2888.05 | 2888.77 | 2888.29 | 2886.19 | 2885.12 | 2883.59 |
| (‡) | -12000 | -3600 | -6400 | -1900 | +4300 | -1500 | -9200 | +6200 | -4100 | -17700 | -8700 | -12100 |
| (††) | 7314 | 5211 | 5642 | 4979 | 5059 | 6035 | 6374 | 6655 | 8234 | 9804 | 9004 | 7210 |

CAL YR 1979 MAX 320800 MIN 268400 ‡ 50500 †† 75687
WTR YR 1980 MAX 289700 MIN 223700 ‡ 66700 †† 81521

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal and industrial uses by Canadian River Water Authority.

## 07227900 LAKE MEREDITH NEAR SANFORD, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1968 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| FEB 04... | 1415 | 1910 | 5.0 | 240 | 82 | 49 | 28 | 330 | 9.3 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| FEB 04... | 7.8 | 190 | 0 | 300 | 350 | .8 | 5.6 | 1160 |

## 07227920 DIXON CREEK NEAR BORGER, TX

LOCATION.--Lat 35°39'53", long 101°21'02", Hutchinson County, Hydrologic Unit 11090106, on right bank at downstream side of bridge on State Highway 152, 2.4 mi (3.9 km) east of Borger, and 7.6 mi (12.2 km) upstream from mouth.

DRAINAGE AREA.--134 $mi^2$ (347 $km^2$).

PERIOD OF RECORD.--March 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,834.84 ft (864.059 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. No known diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--6 years, 2.74 $ft^3/s$ (0.0776 $m^3/s$), 1,990 acre-ft/yr (2.45 $hm^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,640 $ft^3/s$ (103 $m^3/s$) May 26, 1977, gage height, 8.99 ft (2.740 m), from rating curve extended above 25 $ft^3/s$ (0.71 $m^3/s$) on basis of slope-conveyance studies; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.-Maximum discharge, 1.100 ft $^3/s$ (31.2 $m^3/s$) June 10 at 2300 hours, gage height, 6.69 ft (2.039 m), no other peak above base of 500 $ft^3/s$ (14.2 $m^3/s$); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .06 | .02 | .03 | .02 | .00 | .25 | 4.9 | .15 | .00 | .00 | .00 |
| 2 | .00 | .05 | .02 | .03 | .03 | .00 | .55 | .72 | .12 | .00 | .00 | .00 |
| 3 | .00 | .06 | .02 | .04 | .04 | .02 | .41 | .38 | .13 | .00 | .00 | .00 |
| 4 | .00 | .05 | .02 | .04 | .04 | .03 | .25 | .50 | .13 | .00 | .00 | .00 |
| 5 | .00 | .03 | .02 | .04 | .04 | .03 | .25 | .43 | .12 | .00 | .00 | .00 |
| 6 | .00 | .02 | .02 | .04 | .04 | .03 | .28 | .49 | .14 | .00 | .00 | .00 |
| 7 | .00 | .02 | .02 | .04 | .06 | .02 | .26 | .40 | .13 | .00 | .00 | .00 |
| 8 | .00 | .05 | .01 | .04 | .04 | .02 | .24 | .46 | .06 | .00 | .00 | .00 |
| 9 | .00 | .09 | .01 | .04 | .03 | .02 | .25 | .26 | .06 | .00 | .00 | .00 |
| 10 | .00 | .06 | .01 | .03 | .03 | .02 | .33 | .36 | 62 | .00 | .00 | .00 |
| 11 | .00 | .05 | .01 | .03 | .02 | .10 | .30 | .41 | 323 | .00 | .00 | .00 |
| 12 | .00 | .08 | .01 | .03 | .02 | .08 | .25 | .32 | 12 | .00 | .00 | .00 |
| 13 | .00 | .08 | .01 | .03 | .04 | .07 | .23 | .14 | .95 | .00 | .00 | .00 |
| 14 | .00 | .08 | .01 | .02 | .06 | .06 | .24 | .14 | .09 | .00 | .00 | .00 |
| 15 | .00 | .08 | .01 | .02 | .06 | .06 | .33 | 13 | .08 | .00 | .00 | .00 |
| 16 | .00 | .06 | .01 | .02 | .04 | .06 | .34 | 4.7 | .05 | .00 | .00 | .00 |
| 17 | .00 | .06 | .01 | .02 | .02 | .08 | .28 | 1.1 | .04 | .00 | .00 | .00 |
| 18 | .00 | .06 | .00 | .02 | .03 | .07 | .28 | .31 | 2.3 | .00 | .00 | .00 |
| 19 | .00 | .05 | .00 | .10 | .04 | .07 | .42 | .18 | .25 | .00 | .00 | .00 |
| 20 | .00 | .05 | .00 | .04 | .05 | .07 | .52 | .18 | .02 | .00 | .00 | .00 |
| 21 | .00 | .04 | .00 | .03 | .04 | .07 | .53 | .08 | .02 | .00 | .00 | .00 |
| 22 | .00 | .04 | .00 | .02 | .02 | .08 | .52 | .08 | .02 | .00 | .00 | .00 |
| 23 | .00 | .03 | .00 | .04 | .02 | .08 | .55 | .09 | .02 | .00 | .00 | .00 |
| 24 | .00 | .03 | .04 | .06 | .02 | .07 | .75 | .11 | .01 | .00 | .00 | .00 |
| 25 | .00 | .03 | .06 | .06 | .02 | .07 | .49 | .14 | .00 | .00 | .00 | .00 |
| 26 | .00 | .02 | .05 | .03 | .02 | .10 | .43 | .12 | .00 | .00 | .00 | .00 |
| 27 | .00 | .02 | .05 | .00 | .02 | 13 | .45 | .23 | .00 | .00 | .00 | .00 |
| 28 | .00 | .02 | .05 | .00 | .06 | 5.8 | .54 | 7.1 | .00 | .00 | .00 | .00 |
| 29 | .00 | .02 | .04 | .00 | .06 | .76 | .67 | 1.3 | .00 | .00 | .00 | .00 |
| 30 | .03 | .02 | .03 | .00 | --- | .53 | 2.1 | .16 | .00 | .00 | .00 | .00 |
| 31 | 2.0 | --- | .03 | .01 | --- | .35 | --- | .17 | --- | .00 | .00 | --- |
| TOTAL | 2.03 | 1.41 | .59 | .95 | 1.03 | 21.82 | 13.29 | 38.96 | 401.89 | .00 | .00 | .00 |
| MEAN | .065 | .047 | .019 | .031 | .036 | .70 | .44 | 1.26 | 13.4 | .000 | .000 | .000 |
| MAX | 2.0 | .09 | .06 | .10 | .06 | 13 | 2.1 | 13 | 323 | .00 | .00 | .00 |
| MIN | .00 | .02 | .00 | .00 | .02 | .00 | .23 | .08 | .00 | .00 | .00 | .00 |
| AC-FT | 4.0 | 2.8 | 1.2 | 1.9 | 2.0 | 43 | 26 | 77 | 797 | .00 | .00 | .00 |

CAL YR 1979 TOTAL 789.44 MEAN 2.16 MAX 422 MIN .00 AC-FT 1570
WTR YR 1980 TOTAL 481.97 MEAN 1.32 MAX 323 MIN .00 AC-FT 956

## 07228000 CANADIAN RIVER NEAR CANADIAN, TX
(National stream-quality accounting network)

LOCATION.--Lat 35°56'06", long 100°22'13", Hemphill County, Hydrologic Unit 11090106, near left bank on downstream side of pier of bridge on U.S. Highways 60 and 83, 600 ft (180 m) downstream from Panhandle and Santa Fe Railway Co. bridge, 1.2 mi (1.9 km) downstream from Red Deer Creek, 1.6 mi (2.6 km) northeast of Canadian, and 433.9 mi (698.1 km) upstream from mouth.

DRAINAGE AREA.--22,866 $mi^2$ (59,222 $km^2$), of which 4,688 $mi^2$ (12,142 $km^2$) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1924 to August 1925 (gage heights only), January 1938 to current year. Prior to April 1938, monthly discharge only, published in WSP 1311.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,301.50 ft (701.497 m) National Geodetic Vertical Datum of 1929. July 1, 1924, to Aug. 31, 1925, and Apr. 21 to Dec. 15, 1938, nonrecording gage; Dec. 16, 1938, to Sept. 30, 1953, water-stage recorder and nonrecording gages; all at site 300 ft (91 m) upstream at same datum.

REMARKS.--Water-discharge records poor. Extreme low flow is maintained by springs which enter the river about 600 ft (180 m) above gage. Some regulation and diversions from Lake Meredith (station 07227900) 75 mi (121 km) upstream. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--26 years (water years 1939-64) prior to completion of Lake Meredith, 549 $ft^3/s$ (15.55 $m^3/s$), 397,800 acre-ft/yr (490 $hm^3/yr$); 16 years (water years 1965-80) regulated, 92.7 $ft^3/s$ (2.625 $m^3/s$), 67,160 acre-ft/yr (82.8 $hm^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 122,000 $ft^3/s$ (3,460 $m^3/s$) Sept. 23, 1941, gage height, 9.8 ft (2.99 m), from graph based on gage readings, from rating curves for two channels extended above 8,000 and 54,000 $ft^3/s$ (227 and 1,530 $m^3/s$); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 20.0 ft (6.10 m) Oct. 2, 1904. Floods of May 2, 1914, and Oct. 5, 1923, reached stages of 12 ft (3.7 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,000 $ft^3/s$ (198 $m^3/s$) May 29 at 0300 hours, gage height, 7.75 ft (2.362 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.0 | 50 | 44 | 60 | 120 | 60 | 91 | 270 | 66 | 4.6 | .03 | .03 |
| 2 | 3.2 | 82 | 41 | 62 | 141 | 50 | 97 | 270 | 47 | 3.9 | .01 | .04 |
| 3 | 3.2 | 52 | 45 | 62 | 211 | 60 | 108 | 239 | 41 | 3.1 | .02 | .03 |
| 4 | 2.7 | 46 | 44 | 65 | 144 | 70 | 108 | 189 | 33 | 2.9 | .01 | .02 |
| 5 | 2.5 | 39 | 44 | 67 | 97 | 65 | 99 | 151 | 36 | 2.0 | .01 | .01 |
| 6 | 2.5 | 34 | 42 | 67 | 72 | 70 | 87 | 135 | 31 | 1.8 | .01 | .01 |
| 7 | 2.5 | 32 | 40 | 67 | 81 | 74 | 77 | 108 | 27 | 1.2 | .01 | .01 |
| 8 | 2.8 | 35 | 38 | 60 | 101 | 72 | 65 | 95 | 33 | 1.1 | .00 | .01 |
| 9 | 2.4 | 74 | 38 | 55 | 101 | 70 | 65 | 99 | 30 | .88 | .00 | .01 |
| 10 | 2.2 | 74 | 37 | 50 | 127 | 68 | 70 | 106 | 27 | .80 | .00 | .05 |
| 11 | 2.2 | 73 | 37 | 58 | 141 | 75 | 64 | 95 | 21 | .66 | .00 | .05 |
| 12 | 2.2 | 58 | 34 | 58 | 151 | 91 | 53 | 79 | 17 | .60 | .00 | .05 |
| 13 | 2.2 | 52 | 34 | 58 | 113 | 95 | 53 | 74 | 35 | .40 | .00 | .05 |
| 14 | 2.2 | 48 | 34 | 58 | 121 | 91 | 53 | 72 | 45 | .34 | .00 | .05 |
| 15 | 2.2 | 50 | 37 | 59 | 110 | 68 | 53 | 151 | 41 | .24 | .08 | .04 |
| 16 | 2.3 | 53 | 38 | 59 | 90 | 62 | 53 | 224 | 33 | .24 | .08 | .03 |
| 17 | 2.4 | 56 | 41 | 59 | 90 | 57 | 50 | 321 | 29 | .20 | .04 | .02 |
| 18 | 2.6 | 58 | 48 | 62 | 97 | 56 | 50 | 774 | 27 | .13 | .04 | .01 |
| 19 | 2.9 | 57 | 47 | 87 | 97 | 54 | 47 | 519 | 29 | .08 | .02 | .01 |
| 20 | 2.5 | 61 | 46 | 135 | 104 | 57 | 48 | 347 | 27 | .08 | .02 | .00 |
| 21 | 2.4 | 55 | 46 | 160 | 95 | 54 | 50 | 265 | 25 | .16 | .02 | .00 |
| 22 | 2.3 | 51 | 49 | 138 | 87 | 51 | 50 | 182 | 23 | .13 | .02 | .00 |
| 23 | 2.4 | 50 | 48 | 121 | 83 | 56 | 48 | 153 | 23 | .13 | .02 | .00 |
| 24 | 2.7 | 49 | 52 | 110 | 79 | 75 | 527 | 138 | 22 | .10 | .02 | .00 |
| 25 | 3.2 | 49 | 53 | 97 | 75 | 81 | 979 | 119 | 16 | .13 | .02 | .00 |
| 26 | 3.5 | 48 | 56 | 80 | 74 | 81 | 347 | 106 | 13 | .09 | .02 | .00 |
| 27 | 3.4 | 48 | 57 | 60 | 75 | 124 | 221 | 99 | 12 | .09 | .02 | .00 |
| 28 | 3.6 | 48 | 62 | 60 | 74 | 340 | 163 | 377 | 11 | .13 | .02 | .00 |
| 29 | 4.5 | 53 | 58 | 70 | 72 | 259 | 131 | 2060 | 9.6 | .08 | .02 | .01 |
| 30 | 18 | 45 | 58 | 80 | --- | 178 | 190 | 481 | 7.0 | .04 | .02 | .06 |
| 31 | 23 | --- | 58 | 100 | --- | 113 | --- | 168 | --- | .04 | .02 | --- |
| TOTAL | 120.7 | 1580 | 1406 | 2384 | 3023 | 2777 | 4097 | 8466 | 836.6 | 26.37 | .60 | .60 |
| MEAN | 3.89 | 52.7 | 45.4 | 76.9 | 104 | 89.6 | 137 | 273 | 27.9 | .85 | .019 | .020 |
| MAX | 23 | 82 | 62 | 160 | 211 | 340 | 979 | 2060 | 66 | 4.6 | .08 | .06 |
| MIN | 2.2 | 32 | 34 | 50 | 72 | 50 | 47 | 72 | 7.0 | .04 | .00 | .00 |
| AC-FT | 239 | 3130 | 2790 | 4730 | 6000 | 5510 | 8130 | 16790 | 1660 | 52 | 1.2 | 1.2 |

CAL YR 1979 TOTAL 35754.99 MEAN 98.0 MAX 4540 MIN .10 AC-FT 70920
WTR YR 1980 TOTAL 24717.87 MEAN 67.5 MAX 2060 MIN .00 AC-FT 49030

## 07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: March 1968 to current year. Pesticide analyses: October 1971 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,480 micromhos Aug. 12, 1979; minimum daily, 461 micromhos Sept. 8, 1980.
WATER TEMPERATURES: Maximum daily, 39.0°C June 28, 1979; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,100 micromhos Nov. 6; minimum daily, 461 micromhos Sept. 8.
WATER TEMPERATURES: Maximum daily, 37.0°C July 2; minimum daily, 0.0°C on many days during winter months.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TURBIDITY (NTU) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) | STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>30... | 1030 | 18 | 1750 | 7.6 | 10.0 | 7.5 | 10.6 | 102 | 21 | >16000 | >17000 |
| NOV<br>27... | 1500 | 48 | 3600 | 8.2 | 7.0 | 6.5 | 15.8 | 144 | 2.7 | K12 | 48 |
| DEC<br>18... | 1130 | 43 | 3800 | 8.1 | .5 | 10 | 17.1 | 128 | 4.6 | 190 | 1000 |
| JAN<br>15... | 1140 | 59 | 3300 | 8.3 | 7.0 | 34 | 17.4 | 160 | 1.5 | K10 | 31 |
| FEB<br>26... | 1300 | 73 | 3500 | 8.2 | 13.5 | 60 | 17.0 | 177 | 1.3 | K8 | K12 |
| MAR<br>25... | 1630 | 81 | 3250 | 8.1 | 16.0 | 8.0 | 12.9 | 145 | 5.0 | K8 | K18 |
| APR<br>22... | 1630 | 50 | 3600 | 8.3 | 24.0 | 6.7 | 12.3 | 162 | 3.0 | 120 | 32 |
| MAY<br>13... | 1100 | 76 | 3550 | 8.3 | 16.0 | 8.9 | 13.4 | 149 | 4.0 | 96 | 22 |
| JUN<br>24... | 1415 | 21 | 3620 | 8.2 | 35.5 | 3.4 | 8.2 | 130 | 5.5 | 66 | 30 |
| JUL<br>22... | 1245 | .25 | 850 | 8.0 | 32.0 | .30 | 11.4 | 168 | 1.1 | 380 | 730 |
| AUG<br>19... | 1130 | .06 | 800 | 7.8 | 27.0 | 38 | 15.2 | 208 | 1.8 | 400 | 720 |
| SEP<br>02... | 1415 | .03 | 533 | 8.0 | 33.0 | 2.7 | 19.4 | 289 | 3.0 | 400 | 270 |

| DATE | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>30... | 360 | 150 | 81 | 37 | 310 | 7.2 | 16 | 250 | 0 | 120 | 500 |
| NOV<br>27... | 630 | 420 | 150 | 62 | 500 | 8.7 | 29 | 260 | 0 | 320 | 850 |
| DEC<br>18... | 680 | 440 | 160 | 69 | 510 | 8.5 | 22 | 280 | 0 | 310 | 870 |
| JAN<br>15... | 560 | 330 | 130 | 56 | 470 | 8.7 | 19 | 280 | 0 | 280 | 730 |
| FEB<br>26... | 600 | 370 | 140 | 60 | 480 | 8.6 | 7.3 | 280 | 0 | 290 | 640 |
| MAR<br>25... | 540 | 320 | 120 | 59 | 420 | 7.8 | 14 | 270 | 0 | 230 | 730 |
| APR<br>22... | 610 | 420 | 140 | 64 | 550 | 9.7 | 20 | 240 | 0 | 300 | 920 |
| MAY<br>13... | 610 | 380 | 140 | 62 | 460 | 8.1 | 3.3 | 280 | 0 | 270 | 830 |
| JUN<br>24... | 530 | 360 | 110 | 61 | 520 | 9.9 | 19 | 200 | 0 | 260 | 910 |
| JUL<br>22... | 210 | 5 | 58 | 17 | 78 | 2.3 | 3.9 | 240 | 0 | 27 | 110 |
| AUG<br>19... | 210 | 4 | 59 | 16 | 78 | 2.3 | 3.3 | 240 | 0 | 24 | 120 |
| SEP<br>02... | 180 | 8 | 53 | 11 | 37 | 1.2 | 3.0 | 220 | 0 | 17 | 56 |

## 07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 30... | 1.3 | 19 | 1190 | 1210 | .10 | .10 | .130 | .060 | 1.7 | .94 |
| NOV 27... | 2.1 | 23 | 2130 | 2070 | .40 | .36 | .170 | .170 | .93 | .93 |
| DEC 18... | 2.6 | 26 | 2190 | 2120 | .73 | .69 | .300 | .350 | 1.1 | .63 |
| JAN 15... | 2.6 | 25 | 1940 | 1850 | .66 | .60 | .330 | .220 | .28 | .45 |
| FEB 26... | 1.2 | 17 | 2030 | 1770 | .45 | .12 | .070 | .010 | .74 | .42 |
| MAR 25... | 1.6 | 20 | 1840 | 1730 | .01 | .23 | .060 | .060 | .77 | .53 |
| APR 22... | 2.0 | 18 | 2200 | 2130 | .10 | .03 | .010 | .210 | 1.8 | 1.4 |
| MAY 13... | 1.8 | 22 | 2010 | 1930 | .28 | .31 | .030 | .040 | .97 | .87 |
| JUN 24... | 1.3 | 23 | 2210 | 2000 | .28 | .02 | .000 | .000 | 1.1 | .60 |
| JUL 22... | .8 | 32 | 447 | 445 | .00 | .00 | .000 | .000 | 1.1 | .50 |
| AUG 19... | .8 | 31 | 437 | 450 | .00 | .00 | .000 | .000 | .66 | .58 |
| SEP 02... | .5 | 21 | 311 | 301 | .00 | .00 | .010 | .000 | 1.2 | .96 |

| DATE | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | PHOS-PHORUS, DIS-SOLVED (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | CARBON, ORGANIC DIS-SOLVED (MG/L AS C) | CARBON, ORGANIC SUS-PENDED (MG/L AS C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 30... | 1.8 | 1.0 | .240 | .210 | -- | 28 | .1 | 170 | 8.3 | 27 |
| NOV 27... | 1.1 | 1.1 | 2.300 | .060 | 8.9 | -- | -- | 59 | 7.6 | 61 |
| DEC 18... | 1.4 | .98 | .110 | .060 | 11 | -- | -- | 93 | 11 | 36 |
| JAN 15... | .61 | .67 | .120 | .070 | 6.9 | -- | -- | 71 | 11 | 33 |
| FEB 26... | .81 | .43 | .110 | .060 | -- | 13 | 1.3 | 314 | 62 | 33 |
| MAR 25... | .83 | .59 | .110 | .040 | 6.7 | -- | -- | 213 | 47 | 18 |
| APR 22... | 1.8 | 1.6 | .070 | .050 | 9.9 | -- | -- | 83 | 11 | 39 |
| MAY 13... | 1.0 | .91 | .130 | .030 | 7.5 | -- | -- | 108 | 22 | 46 |
| JUN 24... | 1.1 | .60 | .030 | .000 | -- | 11 | 3.6 | 64 | 3.6 | 26 |
| JUL 22... | 1.1 | .50 | .040 | .020 | 6.3 | -- | -- | 35 | .02 | 84 |
| AUG 19... | .66 | .58 | .040 | .020 | -- | 4.6 | .8 | 11 | .00 | 62 |
| SEP 02... | 1.2 | .96 | .050 | .020 | 6.5 | -- | -- | 14 | .00 | 90 |

| DATE | TIME | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUS-PENDED TOTAL (UG/L AS AS) | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) | BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) | CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 30... | 1030 | 3 | 1 | 2 | 500 | 100 | 400 | 0 | 0 | <1 | 4 |
| DEC 18... | 1130 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FEB 26... | 1300 | 3 | 1 | 2 | 500 | 100 | 400 | 0 | 0 | 0 | 0 |
| MAR 25... | 1630 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 13... | 1100 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 24... | 1415 | 4 | 0 | 4 | 300 | 0 | 300 | 0 | 0 | 0 | 0 |
| AUG 19... | 1130 | 5 | 1 | 4 | 300 | 0 | 400 | 0 | -- | <1 | 20 |
| SEP 02... | 1415 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

## 07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) | CHROMIUM, DISSOLVED (UG/L AS CR) | COBALT, TOTAL RECOVERABLE (UG/L AS CO) | COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) | COBALT, DISSOLVED (UG/L AS CO) | COPPER, TOTAL RECOVERABLE (UG/L AS CU) | COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) | COPPER, DISSOLVED (UG/L AS CU) | IRON, TOTAL RECOVERABLE (UG/L AS FE) | IRON, SUSPENDED RECOVERABLE (UG/L AS FE) | IRON, DISSOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 30... | 4 | 0 | 2 | 0 | <3 | 0 | 0 | 0 | 910 | 800 | 110 |
| DEC 18... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FEB 26... | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 570 | 560 | 10 |
| MAR 25... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 24... | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 2 | 290 | 280 | 10 |
| AUG 19... | 20 | 0 | 1 | -- | <3 | 4 | 3 | 1 | 220 | 200 | 20 |
| SEP 02... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | LEAD, TOTAL RECOVERABLE (UG/L AS PB) | LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) | MANGANESE, SUSPENDED RECOV. (UG/L AS MN) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY TOTAL RECOVERABLE (UG/L AS HG) | MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) | MERCURY DISSOLVED (UG/L AS HG) | NICKEL, TOTAL RECOVERABLE (UG/L AS NI) | NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 30... | 3 | 3 | 0 | 130 | 60 | 70 | .0 | .0 | .8 | 6 | 6 |
| DEC 18... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FEB 26... | 9 | 9 | 0 | 50 | 50 | 0 | .0 | .0 | .4 | 6 | 6 |
| MAR 25... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 24... | 4 | 3 | 1 | 50 | 50 | 0 | .0 | .0 | .0 | 7 | 0 |
| AUG 19... | 3 | 1 | 2 | 40 | 0 | 50 | .1 | .0 | .1 | 5 | 5 |
| SEP 02... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | NICKEL, DISSOLVED (UG/L AS NI) | SELENIUM, TOTAL (UG/L AS SE) | SELENIUM, SUSPENDED TOTAL (UG/L AS SE) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, TOTAL RECOVERABLE (UG/L AS AG) | SILVER, SUSPENDED RECOVERABLE (UG/L AS AG) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, TOTAL RECOVERABLE (UG/L AS ZN) | ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 30... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 20 | 5 |
| DEC 18... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| FEB 26... | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 10 | 0 | 10 |
| MAR 25... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| MAY 13... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| JUN 24... | 8 | 1 | 0 | 1 | 0 | 0 | 0 | 20 | 10 | 10 |
| AUG 19... | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 20 | 20 | 4 |
| SEP 02... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |

## 07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | PCB, TOTAL (UG/L) | PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | CHLORDANE, TOTAL (UG/L) | CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV<br>27... | 1500 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| FEB<br>26... | 1300 | ND | -- | ND | -- | ND | -- | ND | -- | ND | -- |

| DATE | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) | DIAZINON, TOTAL (UG/L) | DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) | DIELDRIN TOTAL (UG/L) | DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | ETHION, TOTAL (UG/L) | ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) | HEPTACHLOR, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV<br>27... | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| FEB<br>26... | ND | -- | ND | -- | ND | -- | ND | -- | ND | -- | ND |

| DATE | HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) | HEPTACHLOR EPOXIDE TOTAL (UG/L) | HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) | MALATHION, TOTAL (UG/L) | MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) | METHOXYCHLOR, TOTAL (UG/L) | METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) | METHYL PARATHION, TOTAL (UG/L) | METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV<br>27... | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| FEB<br>26... | -- | ND | -- | ND | -- | ND | -- | ND | -- | ND | -- |

| DATE | METHYL TRITHION, TOTAL (UG/L) | METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) | PARATHION, TOTAL (UG/L) | PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) | TOXAPHENE, TOTAL (UG/L) | TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) | TOTAL TRITHION (UG/L) | TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) | 2,4-D, TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) | SILVEX, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV<br>27... | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| FEB<br>26... | ND | -- | ND | -- | ND | -- | ND | -- | -- | -- | -- |

### 07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE | NOV 27,79 | MAR 1,80 | MAY 13,80 | JUN 24,80 |
|---|---|---|---|---|
| TIME | 1500 | 0000 | 1100 | 1415 |
| TOTAL CELLS/ML | 29000 | 7800 | 88000 | 110000 |
| DIVERSITY: DIVISION | 1.6 | 1.6 | 1.0 | 0.2 |
| .CLASS | 1.6 | 1.6 | 1.0 | 0.2 |
| ..ORDER | 1.7 | 1.9 | 1.4 | 0.3 |
| ...FAMILY | 2.1 | 2.7 | 1.6 | 1.7 |
| ....GENUS | 2.2 | 3.1 | 1.6 | 1.8 |

| ORGANISM | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT |
|---|---|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | | | |
| .CHLOROPHYCEAE | | | | | | | | |
| ..CHLOROCOCCALES | | | | | | | | |
| ...CHARACIACEAE | | | | | | | | |
| ....SCHROEDERIA | -- | - | -- | - | -- | - | * | 0 |
| ...HYDRODICTYACEAE | | | | | | | | |
| ....PEDIASTRUM | -- | - | -- | - | -- | - | 31000# | 29 |
| ...MICRACTINIACEAE | | | | | | | | |
| ....MICRACTINIUM | -- | - | -- | - | -- | - | 11000 | 11 |
| ...OOCYSTACEAE | | | | | | | | |
| ....ANKISTRODESMUS | -- | - | 180 | 2 | -- | - | -- | - |
| ....CHLORELLA | -- | - | 540 | 7 | -- | - | -- | - |
| ....CHODATELLA | 910 | 3 | 360 | 5 | -- | - | * | 0 |
| ....DICTYOSPHAERIUM | -- | - | -- | - | 650 | 1 | -- | - |
| ....OOCYSTIS | -- | - | -- | - | -- | - | 1100 | 1 |
| ....SELENASTRUM | -- | - | -- | - | -- | - | -- | - |
| ....TETRAEDRON | -- | - | -- | - | -- | - | -- | - |
| ...SCENEDESMACEAE | | | | | | | | |
| ....CRUCIGENIA | -- | - | -- | - | -- | - | 880 | 1 |
| ....SCENEDESMUS | 7600# | 26 | 3100# | 40 | 43000# | 49 | 57000# | 54 |
| ..VOLVOCALES | | | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | | | |
| ....CHLAMYDOMONAS | -- | - | 310 | 4 | 5200 | 6 | 660 | 1 |
| ...PHACOTACEAE | | | | | | | | |
| ....PTEROMONAS | -- | - | -- | - | -- | - | * | 0 |
| ...VOLVOCACEAE | | | | | | | | |
| ....PANDORINA | -- | - | -- | - | -- | - | -- | - |
| ..ZYGNEMATALES | | | | | | | | |
| ...DESMIDIACEAE | | | | | | | | |
| ....CLOSTERIUM | -- | - | -- | - | -- | - | -- | - |
| CHRYSOPHYTA | | | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | | | |
| ..CENTRALES | | | | | | | | |
| ...CHAETOCERACEAE | | | | | | | | |
| ....CHAETOCEROS | -- | - | -- | - | 2000 | 2 | -- | - |
| ...COSCINODISCACEAE | | | | | | | | |
| ....CYCLOTELLA | 460 | 2 | 360 | 5 | 35000# | 40 | 660 | 1 |
| ....STEPHANODISCUS | -- | - | -- | - | 650 | 1 | -- | - |
| ..PENNALES | | | | | | | | |
| ...ACHNANTHACEAE | | | | | | | | |
| ....ACHNANTHES | * | 0 | 45 | 1 | 650 | 1 | -- | - |
| ...CYMBELLACEAE | | | | | | | | |
| ....AMPHORA | -- | - | -- | - | -- | - | -- | - |
| ...EUNOTIACEAE | | | | | | | | |
| ....EUNOTIA | -- | - | 90 | 1 | -- | - | -- | - |
| ...GOMPHONEMATACEAE | | | | | | | | |
| ....GOMPHONEMA | -- | - | 220 | 3 | -- | - | -- | - |
| ...NAVICULACEAE | | | | | | | | |
| ....MASTOGLOIA | 230 | 1 | -- | - | -- | - | -- | - |
| ....NAVICULA | 1300 | 4 | 400 | 5 | -- | - | -- | - |
| ....PLAGIOTROPIS | 800 | 3 | 400 | 5 | -- | - | -- | - |
| ...NITZSCHIACEAE | | | | | | | | |
| ....NITZSCHIA | 5800# | 20 | 270 | 3 | -- | - | 880 | 1 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | | | |
| .CRYPTOPHYCEAE | | | | | | | | |
| ..CRYPTOMONADALES | | | | | | | | |
| ...CRYPTOMONADACEAE | | | | | | | | |
| ....CRYPTOMONAS | * | 0 | -- | - | -- | - | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | | | |
| .CYANOPHYCEAE | | | | | | | | |
| ..CHROOCOCCALES | | | | | | | | |
| ...CHROOCOCCACEAE | | | | | | | | |
| ....AGMENELLUM | -- | - | -- | - | -- | - | -- | - |
| ....ANACYSTIS | 11000# | 40 | -- | - | -- | - | 1800 | 2 |
| ..HORMOGONALES | | | | | | | | |
| ...NOSTOCACEAE | | | | | | | | |
| ....ANABAENA | -- | - | -- | - | -- | - | -- | - |
| ...OSCILLATORIACEAE | | | | | | | | |
| ....LYNGBYA | -- | - | -- | - | -- | - | -- | - |
| ....OSCILLATORIA | -- | - | -- | - | -- | - | -- | - |
| ....SCHIZOTHRIX | -- | - | 1100 | 14 | -- | - | -- | - |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | | | |
| .EUGLENOPHYCEAE | | | | | | | | |
| ..EUGLENALES | | | | | | | | |
| ...EUGLENACEAE | | | | | | | | |
| ....EUGLENA | * | 0 | 270 | 3 | 650 | 1 | -- | - |
| ....TRACHELOMONAS | -- | - | 130 | 2 | -- | - | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| | | | |
|---|---|---|---|
| DATE | JUL 22,80 | AUG 19,80 | SEP 2,80 |
| TIME | 1245 | 1130 | 1415 |
| TOTAL CELLS/ML | 23000 | 4700 | 3800 |
| DIVERSITY: DIVISION | 0.5 | 0.7 | 1.2 |
| .CLASS | 0.5 | 0.7 | 1.2 |
| ..ORDER | 1.0 | 1.7 | 2.1 |
| ...FAMILY | 1.1 | 2.3 | 2.4 |
| ....GENUS | 1.3 | 2.5 | 2.4 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | -- | - | -- | - | -- | - |
| ...HYDRODICTYACEAE | | | | | | |
| ....PEDIASTRUM | 180 | 1 | 91 | 2 | -- | - |
| ...MICRACTINIACEAE | | | | | | |
| ....MICRACTINIUM | -- | - | -- | - | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | -- | - | -- | - | -- | - |
| ....CHLORELLA | -- | - | -- | - | -- | - |
| ....CHODATELLA | -- | - | -- | - | -- | - |
| ....DICTYOSPHAERIUM | -- | - | -- | - | -- | - |
| ....OOCYSTIS | -- | - | -- | - | -- | - |
| ....SELENASTRUM | -- | - | -- | - | 29 | 1 |
| ....TETRAEDRON | -- | - | * | 0 | 29 | 1 |
| ...SCENEDESMACEAE | | | | | | |
| ....CRUCIGENIA | -- | - | -- | - | -- | - |
| ....SCENEDESMUS | 350 | 2 | 52 | 1 | 320 | 8 |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | 300 | 1 | 26 | 1 | 200 | 5 |
| ...PHACOTACEAE | | | | | | |
| ....PTEROMONAS | -- | - | -- | - | -- | - |
| ...VOLVOCACEAE | | | | | | |
| ....PANDORINA | -- | - | -- | - | 230 | 6 |
| ..ZYGNEMATALES | | | | | | |
| ...DESMIDIACEAE | | | | | | |
| ....CLOSTERIUM | -- | - | -- | - | 29 | 1 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...CHAETOCERACEAE | | | | | | |
| ....CHAETOCEROS | -- | - | -- | - | -- | - |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 200 | 1 | 140 | 3 | 160 | 4 |
| ....STEPHANODISCUS | -- | - | -- | - | -- | - |
| ..PENNALES | | | | | | |
| ...ACHNANTHACEAE | | | | | | |
| ....ACHNANTHES | -- | - | -- | - | -- | - |
| ...CYMBELLACEAE | | | | | | |
| ....AMPHORA | -- | - | * | 0 | -- | - |
| ...EUNOTIACEAE | | | | | | |
| ....EUNOTIA | -- | - | -- | - | -- | - |
| ...GOMPHONEMATACEAE | | | | | | |
| ....GOMPHONEMA | -- | - | -- | - | -- | - |
| ...NAVICULACEAE | | | | | | |
| ....MASTOGLOIA | -- | - | -- | - | -- | - |
| ....NAVICULA | 230 | 1 | 130 | 3 | 72 | 2 |
| ....PLAGIOTROPIS | -- | - | -- | - | -- | - |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 430 | 2 | 180 | 4 | 140 | 4 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | * | 0 | * | 0 | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | 600 | 3 | 280 | 6 | -- | - |
| ....ANACYSTIS | 1800 | 8 | 1300# | 27 | 1800# | 49 |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENA | -- | - | 740# | 16 | -- | - |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | 710 | 3 | -- | - | -- | - |
| ....OSCILLATORIA | 18000# | 79 | 1700# | 37 | 720# | 19 |
| ....SCHIZOTHRIX | -- | - | -- | - | -- | - |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....EUGLENA | -- | - | -- | - | -- | - |
| ....TRACHELOMONAS | * | 0 | -- | - | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 120.7 | 2070 | 1250 | 408 | 450 | 147 | 160 | 51 | 400 |
| NOV. | 1979 | 1580 | 3570 | 2160 | 9200 | 840 | 3600 | 310 | 1320 | 580 |
| DEC. | 1979 | 1406 | 3270 | 1980 | 7510 | 760 | 2890 | 270 | 1040 | 550 |
| JAN. | 1980 | 2384 | 3080 | 1860 | 12000 | 710 | 4560 | 250 | 1630 | 530 |
| FEB. | 1980 | 3023 | 3030 | 1830 | 14900 | 700 | 5680 | 250 | 2030 | 530 |
| MAR. | 1980 | 2777 | 2820 | 1700 | 12800 | 640 | 4810 | 230 | 1710 | 500 |
| APR. | 1980 | 4097 | 2390 | 1440 | 16000 | 540 | 5930 | 190 | 2080 | 440 |
| MAY | 1980 | 8466 | 2090 | 1260 | 28900 | 460 | 10600 | 160 | 3690 | 390 |
| JUNE | 1980 | 836.6 | 2980 | 1800 | 4070 | 680 | 1550 | 240 | 553 | 520 |
| JULY | 1980 | 26.37 | 2340 | 1420 | 101 | 530 | 38 | 190 | 13 | 430 |
| AUG. | 1980 | 0.60 | 639 | 388 | 0.6 | 130 | 0.2 | 41 | 0.07 | 150 |
| SEPT | 1980 | 0.60 | 592 | 360 | 0.6 | 120 | 0.2 | 38 | 0.06 | 140 |
| TOTAL | | 24717.87 | ** | ** | 106000 | ** | 39800 | ** | 14100 | ** |
| WTD. AVG. | | 68 | 2620 | 1590 | ** | 600 | ** | 210 | ** | 470 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2100 | 2930 | 3450 | 3210 | 3320 | 3220 | 2630 | 2410 | 2320 | 3160 | 552 | 502 |
| 2 | 2050 | 2530 | 3410 | 2740 | 3150 | 2990 | 2580 | 2440 | 2660 | 3070 | 548 | 487 |
| 3 | 1930 | 2880 | 3480 | 2930 | 2760 | 3060 | 2700 | 2500 | 2820 | 2810 | 539 | 491 |
| 4 | 1830 | 3630 | 3580 | 3100 | 2940 | 3380 | 2920 | 2570 | 3010 | 2720 | 527 | 490 |
| 5 | 1850 | 3900 | 3380 | 3180 | 3000 | 3050 | 2980 | 2730 | 3080 | 2700 | 538 | 487 |
| 6 | 1810 | 4100 | 3400 | 3100 | 3010 | 3100 | 3290 | 3010 | 3200 | 2520 | 534 | 490 |
| 7 | 1720 | 4050 | 3340 | 3120 | 2960 | 3240 | 3200 | 3220 | 3250 | 2200 | 523 | 488 |
| 8 | 1730 | 3850 | 3350 | 3080 | 2750 | 3320 | 3130 | 3270 | 2700 | 1820 | --- | 461 |
| 9 | 1700 | 3200 | 3390 | 3020 | 2770 | 3190 | 3290 | 3180 | 2990 | 1050 | --- | 493 |
| 10 | 1640 | 3500 | 3400 | 3040 | 2570 | 3240 | 3250 | 3360 | 3100 | 807 | --- | 488 |
| 11 | 1700 | 3580 | 3450 | 3150 | 2830 | 2920 | 3490 | 3260 | 3170 | 670 | --- | 478 |
| 12 | 1810 | 3800 | 3390 | 3370 | 2750 | 2840 | 3350 | 3470 | 3260 | 561 | --- | 487 |
| 13 | 1800 | 3830 | 3360 | 3130 | 2820 | 2940 | 3260 | 3520 | 3550 | 577 | --- | 490 |
| 14 | 1820 | 3870 | 3330 | 3140 | 2990 | 2920 | 3320 | 3550 | 2250 | 570 | --- | 540 |
| 15 | 1830 | 3860 | 3380 | 3180 | 2860 | 3080 | 3190 | 2950 | 2480 | 571 | 732 | 612 |
| 16 | 1890 | 3840 | 3440 | 3190 | 3180 | 3180 | 3330 | 2640 | 2500 | 590 | 760 | 537 |
| 17 | 1880 | 3820 | 3580 | 3090 | 3120 | 3280 | 3370 | 2520 | 2530 | 578 | 785 | 587 |
| 18 | 1910 | 3790 | 3120 | 3110 | 3080 | 3320 | 3210 | 1600 | 2800 | 591 | 782 | 607 |
| 19 | 2050 | 3740 | 3090 | 3050 | 3290 | 3340 | 3070 | 1840 | 3160 | 596 | 800 | 687 |
| 20 | 2190 | 3680 | 3200 | 2780 | 3180 | 3380 | 3310 | 1870 | 3530 | 588 | 780 | --- |
| 21 | 2070 | 3700 | 3310 | 2600 | 3190 | 3340 | 3340 | 2480 | 3700 | 895 | 622 | --- |
| 22 | 1990 | 3680 | 3410 | 2760 | 3200 | 3300 | 3550 | 2640 | 3820 | 783 | 558 | --- |
| 23 | 1860 | 3670 | 3120 | 2910 | 3220 | 3230 | 3580 | 2930 | 3380 | 702 | 480 | --- |
| 24 | 1930 | 3620 | 3110 | 3160 | 3230 | 2970 | 2240 | 3190 | 3570 | 674 | 498 | --- |
| 25 | 2110 | 3600 | 3090 | 3170 | 3250 | 3090 | 1510 | 3400 | 3620 | 646 | 497 | --- |
| 26 | 2170 | 3610 | 3140 | 3250 | 3370 | 2900 | 1830 | 3500 | 3380 | 638 | 480 | --- |
| 27 | 2280 | 3600 | 3150 | 3360 | 3330 | 2280 | 2280 | 3350 | 3420 | 462 | 496 | --- |
| 28 | 2220 | 3470 | 3090 | 3470 | 3380 | 2120 | 2540 | 2920 | 3440 | 500 | 498 | --- |
| 29 | 2250 | 3520 | 3040 | 3440 | 3450 | 2280 | 2790 | 1070 | 3390 | 520 | 510 | 1300 |
| 30 | 1870 | 3480 | 3080 | 3400 | --- | 2340 | 2070 | 1320 | 3150 | 517 | 582 | 1160 |
| 31 | 2580 | --- | 3050 | 3350 | --- | 2610 | --- | 1670 | --- | 519 | 555 | --- |
| MEAN | 1950 | 3610 | 3290 | 3120 | 3070 | 3010 | 2950 | 2720 | 3110 | 1150 | 591 | 589 |

## 07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 33.0 | 6.0 | 2.0 | 4.0 | .0 | --- | --- | 16.0 | 25.0 | 28.0 | 30.0 | 29.0 |
| 2 | 33.0 | 10.0 | 4.0 | 3.0 | .0 | 4.0 | 10.0 | 17.0 | 30.0 | 37.0 | 30.0 | 30.0 |
| 3 | 20.0 | 11.0 | 7.0 | 3.0 | .0 | 6.0 | --- | 20.0 | 27.0 | 35.0 | 31.0 | 30.0 |
| 4 | 21.0 | 12.0 | 9.0 | 4.0 | 4.0 | 11.0 | 15.0 | 23.0 | 30.0 | 34.0 | --- | 30.0 |
| 5 | 23.0 | 19.0 | 5.0 | 3.0 | 7.0 | 11.0 | 16.0 | 23.0 | 27.0 | 34.0 | --- | 30.0 |
| 6 | 10.0 | --- | 4.0 | 1.0 | 5.0 | 12.0 | 15.0 | 26.0 | 31.0 | 35.0 | --- | 30.0 |
| 7 | 24.0 | 10.0 | 7.0 | .0 | --- | 12.0 | 18.0 | 20.0 | 30.0 | 33.0 | --- | 30.0 |
| 8 | 24.0 | 8.0 | 5.0 | .0 | .0 | 8.0 | 13.0 | 16.0 | 24.0 | 34.0 | --- | 28.0 |
| 9 | 16.0 | 7.0 | 7.0 | .0 | .0 | 14.0 | 16.0 | 20.0 | 27.0 | 32.0 | --- | 25.0 |
| 10 | 20.0 | 4.0 | 10.0 | 7.0 | 1.0 | 14.0 | 18.0 | 17.0 | 25.0 | 34.0 | --- | 20.0 |
| 11 | 25.0 | 5.0 | 1.0 | 4.0 | 5.0 | 9.0 | 13.0 | 14.0 | 28.0 | 30.0 | --- | 20.0 |
| 12 | 20.0 | 8.0 | 1.0 | 4.0 | 2.0 | 12.0 | 10.0 | 17.0 | 30.0 | 33.0 | --- | 26.0 |
| 13 | 20.0 | 10.0 | 2.0 | 10.0 | 7.0 | 14.0 | 11.0 | 21.0 | 27.0 | 30.0 | --- | 20.0 |
| 14 | --- | 11.0 | 4.0 | 9.0 | 5.0 | 10.0 | 10.0 | 16.0 | 31.0 | 28.0 | --- | --- |
| 15 | 25.0 | 10.0 | --- | 7.0 | .0 | 17.0 | 20.0 | 14.0 | 31.0 | 24.0 | --- | 23.0 |
| 16 | 23.0 | 12.0 | .0 | 8.0 | .0 | 12.0 | 15.0 | 17.0 | --- | 28.0 | --- | 22.0 |
| 17 | 22.0 | 10.0 | .0 | 7.0 | --- | 13.0 | 14.0 | 15.0 | 25.0 | 24.0 | 30.0 | 23.0 |
| 18 | 20.0 | --- | 1.0 | 6.0 | 5.0 | 14.0 | --- | 20.0 | 28.0 | 25.0 | 30.0 | 26.0 |
| 19 | 20.0 | 12.0 | 4.0 | --- | 11.0 | 15.0 | 10.0 | 24.0 | 27.0 | 25.0 | 30.0 | 25.0 |
| 20 | 21.0 | 8.0 | 4.0 | .0 | 11.0 | 15.0 | 20.0 | 20.0 | 26.0 | --- | 30.0 | --- |
| 21 | 20.0 | 6.0 | 4.0 | --- | 13.0 | 14.0 | 20.0 | 24.0 | 27.0 | 29.0 | 29.0 | --- |
| 22 | 16.0 | --- | 6.0 | 3.0 | 15.0 | 13.0 | 22.0 | 25.0 | 22.0 | 25.0 | 27.0 | --- |
| 23 | 17.0 | 6.0 | 1.0 | 5.0 | 12.0 | --- | --- | 25.0 | 34.0 | 25.0 | 30.0 | --- |
| 24 | 18.0 | 8.0 | 5.0 | 7.0 | 10.0 | 12.0 | 17.0 | 27.0 | 28.0 | 25.0 | 30.0 | --- |
| 25 | 21.0 | 7.0 | 6.0 | 6.0 | 12.0 | 10.0 | 16.0 | 28.0 | 34.0 | 29.0 | 30.0 | --- |
| 26 | 20.0 | 5.0 | 4.0 | --- | 14.0 | 17.0 | 10.0 | 23.0 | 30.0 | 30.0 | 28.0 | --- |
| 27 | 15.0 | 5.0 | 5.0 | --- | 15.0 | 15.0 | 18.0 | 21.0 | 34.0 | 27.0 | 28.0 | --- |
| 28 | 16.0 | 3.0 | 4.0 | .0 | 17.0 | 14.0 | 19.0 | 25.0 | 36.0 | 28.0 | 30.0 | --- |
| 29 | 15.0 | .0 | 1.0 | --- | 2.0 | 5.0 | 23.0 | 25.0 | 30.0 | 30.0 | 30.0 | 20.0 |
| 30 | 8.0 | 1.0 | .0 | --- | --- | 6.0 | 14.0 | 27.0 | 27.0 | 30.0 | 30.0 | 24.0 |
| 31 | 7.0 | --- | 3.0 | .0 | --- | 15.0 | --- | 22.0 | --- | 30.0 | 20.0 | --- |
| MEAN | 20.0 | 8.0 | 4.0 | 4.0 | 6.5 | 12.0 | 15.5 | 21.0 | 28.5 | 29.5 | 29.0 | 26.0 |

## 07235000 WOLF CREEK AT LIPSCOMB, TX

LOCATION (revised).--Lat 36°14'19", long 100°16'31", Lipscomb County, Hydrologic Unit 11100203, on right bank at downstream side of State Highway 305, 0.3 mi (0.5 km) north of Lipscomb, 0.6 mi (1.0 km) downstream from Sand Creek, 2 mi (3 km) upstream from Plum Creek, and 61.2 mi (98.5 km) upstream from mouth.

DRAINAGE AREA.--697 mi$^2$ (1,805 km$^2$), of which 222 mi$^2$ (575 km$^2$) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1937 to September 1942, October 1961 to current year. Prior to 1941, monthly discharges only, published in WSP 1311.

REVISED RECORDS.--WSP 1311: 1938-39, drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 2,371.29 ft (722.769 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 25, 1938, nonrecording gage, Feb. 25, 1938, to Sept. 30, 1942, water-stage recorder at present site at datum 5.77 ft (1.759 m) higher.

REMARKS.--Water-discharge records fair. Small diversion upstream from station for irrigation and recreation.

AVERAGE DISCHARGE.--24 years (water years 1938-42, 1962-80), 17.7 ft$^3$/s (0.501 m$^3$/s), 0.51 in/yr (13 mm/yr), 12,820 acre-ft/yr (15.8 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft$^3$/s (566 m$^3$/s) Oct. 21, 1941, gage height, 11.57 ft (3.527 m), present datum, from rating curve extended above 14,000 ft$^3$/s (396 m$^3$/s) on basis of velocity-area studies; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1890, 15.5 ft (4.72 m) June 23, 1957, present site and datum, from floodmarks. Flood in May 1955 reached a stage of 12.1 ft (3.69 m), present site and datum, from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft$^3$/s (14.2 m$^3$/s) and maximum (*):

| Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| Apr. 25 | 0015 | *2,220 | 62.9 | 8.47 | 2.582 |
| May 30 | 0200 | 1,320 | 37.4 | 7.50 | 2.286 |

Minimum discharge, 0.85 ft$^3$/s (0.024 m$^3$/s) Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.1 | 4.0 | 2.2 | 3.7 | 4.4 | 5.4 | 8.0 | 46 | 64 | 6.4 | 2.1 | 1.8 |
| 2 | 1.0 | 3.2 | 2.3 | 3.7 | 4.3 | 5.5 | 7.8 | 41 | 44 | 6.2 | 2.1 | 1.8 |
| 3 | 1.1 | 2.6 | 2.3 | 3.6 | 4.7 | 4.4 | 8.1 | 36 | 35 | 6.2 | 2.1 | 1.4 |
| 4 | 1.1 | 2.6 | 2.3 | 3.6 | 4.6 | 4.2 | 7.4 | 32 | 31 | 6.0 | 2.0 | 1.3 |
| 5 | 1.3 | 2.4 | 2.3 | 4.0 | 4.4 | 4.1 | 7.1 | 30 | 27 | 5.8 | 2.0 | 1.3 |
| 6 | 1.3 | 2.3 | 2.3 | 4.3 | 4.3 | 4.0 | 6.8 | 28 | 24 | 5.8 | 2.0 | 1.3 |
| 7 | 1.3 | 2.3 | 2.3 | 4.1 | 4.4 | 4.0 | 6.4 | 26 | 23 | 5.6 | 1.8 | 1.3 |
| 8 | 1.3 | 2.3 | 2.2 | 4.3 | 4.3 | 4.0 | 6.1 | 24 | 20 | 5.4 | 1.8 | 1.3 |
| 9 | 1.3 | 3.2 | 2.3 | 4.2 | 4.4 | 4.1 | 5.7 | 24 | 19 | 5.0 | 1.8 | 1.3 |
| 10 | 1.3 | 3.0 | 2.4 | 4.2 | 4.4 | 4.1 | 5.5 | 22 | 18 | 4.8 | 1.6 | 1.1 |
| 11 | 1.3 | 3.0 | 2.5 | 3.8 | 4.9 | 4.1 | 5.5 | 21 | 17 | 4.6 | 1.6 | 1.0 |
| 12 | 1.3 | 2.8 | 2.4 | 3.7 | 4.8 | 4.4 | 5.4 | 20 | 16 | 4.4 | 1.6 | 1.0 |
| 13 | 1.3 | 2.6 | 2.5 | 3.6 | 4.8 | 4.5 | 5.3 | 18 | 15 | 4.2 | 1.6 | 1.0 |
| 14 | 1.1 | 2.3 | 2.6 | 3.6 | 4.7 | 4.3 | 5.1 | 18 | 14 | 3.9 | 2.0 | 1.0 |
| 15 | 1.3 | 2.3 | 2.5 | 3.5 | 4.6 | 4.3 | 5.0 | 21 | 13 | 3.7 | 2.0 | 1.0 |
| 16 | 1.3 | 2.4 | 2.8 | 3.5 | 4.4 | 4.2 | 4.9 | 25 | 12 | 3.5 | 2.0 | 1.0 |
| 17 | 1.3 | 2.3 | 2.9 | 3.4 | 4.2 | 4.2 | 4.8 | 21 | 12 | 3.3 | 2.0 | 1.0 |
| 18 | 1.4 | 2.3 | 2.7 | 3.5 | 4.9 | 4.0 | 4.7 | 20 | 12 | 3.2 | 2.0 | 1.1 |
| 19 | 1.4 | 2.1 | 2.8 | 5.2 | 4.7 | 3.8 | 4.6 | 18 | 11 | 3.0 | 2.0 | 1.0 |
| 20 | 1.3 | 2.2 | 2.8 | 5.3 | 4.6 | 3.7 | 4.6 | 17 | 11 | 3.0 | 2.0 | 1.1 |
| 21 | 1.1 | 2.2 | 3.5 | 5.8 | 4.5 | 3.8 | 4.5 | 16 | 11 | 4.2 | 2.0 | 1.0 |
| 22 | 1.1 | 2.3 | 13 | 5.9 | 4.4 | 3.8 | 4.4 | 15 | 10 | 4.2 | 2.0 | 1.1 |
| 23 | 1.1 | 2.2 | 10 | 5.7 | 4.4 | 3.9 | 5.0 | 14 | 9.7 | 3.5 | 2.0 | 1.1 |
| 24 | 1.1 | 2.2 | 8.3 | 5.5 | 4.2 | 4.2 | 453 | 13 | 9.2 | 3.2 | 2.0 | 1.1 |
| 25 | 1.3 | 2.2 | 6.6 | 5.1 | 4.1 | 4.3 | 1140 | 12 | 8.8 | 2.8 | 2.0 | 1.3 |
| 26 | 1.4 | 2.2 | 5.5 | 4.8 | 4.0 | 4.5 | 146 | 11 | 7.9 | 2.6 | 2.0 | 1.3 |
| 27 | 1.4 | 2.2 | 4.9 | 4.8 | 4.0 | 6.4 | 66 | 11 | 7.4 | 2.6 | 2.0 | 1.3 |
| 28 | 1.4 | 2.2 | 4.6 | 4.6 | 4.0 | 12 | 49 | 16 | 7.0 | 2.6 | 2.0 | 1.3 |
| 29 | 1.4 | 2.2 | 4.3 | 4.7 | 4.0 | 12 | 41 | 60 | 7.0 | 2.4 | 2.0 | 1.4 |
| 30 | 4.2 | 2.1 | 4.0 | 4.8 | --- | 10 | 46 | 636 | 6.8 | 2.3 | 2.0 | 1.6 |
| 31 | 5.2 | --- | 3.8 | 4.8 | --- | 8.8 | --- | 133 | --- | 2.1 | 1.8 | --- |
| TOTAL | 45.8 | 74.2 | 117.9 | 135.3 | 128.4 | 159.0 | 2073.7 | 1445 | 522.8 | 126.5 | 59.9 | 36.6 |
| MEAN | 1.48 | 2.47 | 3.80 | 4.36 | 4.43 | 5.13 | 69.1 | 46.6 | 17.4 | 4.08 | 1.93 | 1.22 |
| MAX | 5.2 | 4.0 | 13 | 5.9 | 4.9 | 12 | 1140 | 636 | 64 | 6.4 | 2.1 | 1.8 |
| MIN | 1.0 | 2.1 | 2.2 | 3.4 | 4.0 | 3.7 | 4.4 | 11 | 6.8 | 2.1 | 1.6 | 1.0 |
| CFSM | .003 | .005 | .008 | .009 | .009 | .011 | .15 | .10 | .04 | .009 | .004 | .003 |
| IN. | .00 | .01 | .01 | .01 | .01 | .01 | .16 | .11 | .04 | .01 | .00 | .00 |
| AC-FT | 91 | 147 | 234 | 268 | 255 | 315 | 4110 | 2870 | 1040 | 251 | 119 | 73 |

CAL YR 1979 TOTAL 5784.90 MEAN 15.8 MAX 2010 MIN .80 CFSM .03 IN .45 AC-FT 11470
WTR YR 1980 TOTAL 4925.10 MEAN 13.5 MAX 1140 MIN 1.0 CFSM .03 IN .39 AC-FT 9770

## 07235000 WOLF CREEK AT LIPSCOMB, TX--Continued

### WATER-QUALITY RECORDS

**PERIOD OF RECORD.**--Chemical and biochemical analyses: May 1980.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAMFLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | COLOR (PLATINUM COBALT UNITS) | TURBIDITY (NTU) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MAY | | | | | | | | | | | |
| 12... | 1515 | 20 | 1600 | 8.3 | 22.0 | 5 | 5.6 | 11.4 | 142 | 2.5 | 18 |

| DATE | STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MAY | | | | | | | | | | | |
| 12... | 24 | 320 | 59 | 78 | 30 | 200 | 4.9 | 5.8 | 310 | 0 | 85 |

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) | SOLIDS, VOLATILE, SUSPENDED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) |
|---|---|---|---|---|---|---|---|---|---|---|
| MAY | | | | | | | | | | |
| 12... | 280 | 1.7 | 26 | 863 | 25 | 2 | .03 | .52 | .020 | 8.2 |

| DATE | TIME | ARSENIC DISSOLVED (UG/L AS AS) | BARIUM, DISSOLVED (UG/L AS BA) | CADMIUM DISSOLVED (UG/L AS CD) | CHROMIUM, DISSOLVED (UG/L AS CR) | COPPER, DISSOLVED (UG/L AS CU) | IRON, DISSOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| MAY | | | | | | | |
| 12... | 1515 | 5 | 300 | <1 | 0 | 2 | 50 |

| DATE | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY DISSOLVED (UG/L AS HG) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| MAY | | | | | | |
| 12... | 0 | 30 | .1 | 0 | 0 | 40 |

## 07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX
(National stream-quality accounting network)

LOCATION.--Lat 34°50'15", long 101°24'49", Armstrong County, Hydrologic Unit 11120103, on left bank at downstream side of bridge on Farm Road 284, 13 mi (21 km) northeast of Wayside, 26 mi (42 km) south of Claude, and at mile 1,145 (1,842 km).

DRAINAGE AREA.--4,211 mi² (10,906 km²), of which 3,281 mi² (8,498 km²) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,463.74 ft (750.948 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. Several small diversions above station.

AVERAGE DISCHARGE.--13 years, 30.8 ft³/s (0.872 m³/s), 22,310 acre-ft/yr (27.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,000 ft³/s (1,640 m³/s) Aug. 28, 1968, gage height, 13.0 ft (3.96 m), from floodmark; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s (170 m³/s) and maximum (*):

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| June 11 | 0045 | *16,200 | 459 | 10.80 | 3.292 |
| Sept. 13 | 2000 | 9,080 | 257 | 10.18 | 3.103 |

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .03 | 6.6 | .60 | .61 | .90 | .81 | .92 | 5.6 | .43 | 1.0 | .00 | .00 |
| 2 | .04 | 3.4 | .60 | .69 | .90 | .72 | 4.5 | 4.9 | .16 | .92 | .00 | .00 |
| 3 | .05 | 1.5 | .60 | .58 | .90 | .94 | .93 | 2.2 | .10 | 1.3 | .00 | .00 |
| 4 | .05 | .87 | .54 | .59 | .90 | .72 | .90 | 1.6 | 3.4 | 1.3 | .00 | .00 |
| 5 | .06 | .65 | .54 | .66 | .66 | .59 | .72 | 2.5 | 153 | .44 | .00 | .00 |
| 6 | .05 | .58 | .54 | .59 | .63 | .75 | .48 | 2.1 | 2.0 | .24 | 4.8 | .02 |
| 7 | .05 | .62 | .54 | .46 | 1.9 | .55 | .45 | 1.2 | .27 | .16 | .41 | .01 |
| 8 | .04 | .98 | .54 | .56 | 2.1 | .46 | .38 | 8.0 | .10 | .08 | .08 | .00 |
| 9 | .04 | 3.2 | .66 | .81 | 1.7 | .55 | .55 | 1.1 | .08 | .03 | .03 | .22 |
| 10 | .06 | .87 | .60 | 1.1 | 1.5 | .67 | .62 | .70 | 115 | .02 | .00 | .11 |
| 11 | .06 | .60 | .54 | 1.1 | 1.6 | .92 | .49 | .34 | 2920 | .01 | .00 | .02 |
| 12 | .06 | .59 | .60 | 1.1 | 1.0 | .53 | .55 | .24 | 292 | .00 | .00 | .00 |
| 13 | .06 | .55 | .73 | 1.3 | .89 | .33 | .63 | .29 | 95 | .00 | .00 | 449 |
| 14 | .05 | .54 | .60 | 1.5 | .73 | .48 | .64 | 7.8 | 57 | .00 | .33 | 190 |
| 15 | .07 | .51 | .66 | 1.5 | .70 | .53 | .68 | 276 | 36 | .00 | 101 | 7.1 |
| 16 | .04 | .52 | .81 | 1.8 | .60 | .48 | .62 | 33 | 25 | .00 | 1.8 | 1.7 |
| 17 | .06 | .52 | .81 | 2.1 | .40 | .35 | .54 | 5.6 | 22 | .00 | .29 | .90 |
| 18 | .09 | .47 | .81 | 3.1 | .30 | .47 | .64 | 2.4 | 17 | .00 | .15 | .67 |
| 19 | .07 | .41 | .66 | 3.9 | .40 | .50 | .66 | 1.6 | 11 | .00 | .40 | .41 |
| 20 | .04 | .46 | .66 | 5.0 | .54 | .47 | .60 | 1.3 | 8.5 | .00 | .20 | .24 |
| 21 | .03 | .22 | .66 | 3.0 | 1.1 | .90 | .63 | .95 | 54 | 24 | .08 | .13 |
| 22 | .03 | .25 | .60 | 1.4 | .95 | 1.5 | 4.1 | .72 | 8.0 | .22 | .42 | .03 |
| 23 | .04 | .54 | .49 | .88 | .84 | 2.6 | 11 | .57 | 5.8 | .08 | .09 | .08 |
| 24 | .06 | .60 | .54 | .68 | .93 | 3.2 | 448 | .37 | 3.3 | .01 | .03 | .12 |
| 25 | .06 | .60 | .54 | .56 | .84 | 5.0 | 45 | .26 | 2.4 | .00 | .01 | .15 |
| 26 | .06 | .54 | .49 | .42 | .82 | 7.5 | 12 | .72 | 2.5 | .00 | .00 | 2.0 |
| 27 | .05 | .54 | 2.0 | .39 | .72 | 55 | 5.7 | 4.0 | 1.8 | .00 | .00 | 2.8 |
| 28 | .06 | .49 | 1.3 | .30 | .80 | 40 | 3.4 | 60 | 1.3 | .00 | .00 | 1.5 |
| 29 | .24 | .60 | .58 | .40 | .87 | 11 | 2.2 | 41 | 1.6 | .00 | .00 | 1.0 |
| 30 | 81 | .60 | .53 | .60 | --- | 2.0 | 24 | 2.6 | 1.1 | .00 | .00 | .99 |
| 31 | 8.2 | --- | .56 | .73 | --- | 1.3 | --- | .84 | --- | .00 | .00 | --- |
| TOTAL | 90.90 | 29.42 | 20.93 | 38.41 | 27.12 | 141.82 | 572.53 | 470.50 | 3839.84 | 29.81 | 110.12 | 659.20 |
| MEAN | 2.93 | .98 | .68 | 1.24 | .94 | 4.57 | 19.1 | 15.2 | 128 | .96 | 3.55 | 22.0 |
| MAX | 81 | 6.6 | 2.0 | 5.0 | 2.1 | 55 | 448 | 276 | 2920 | 24 | 101 | 449 |
| MIN | .03 | .22 | .49 | .30 | .30 | .33 | .38 | .24 | .08 | .00 | .00 | .00 |
| AC-FT | 180 | 58 | 42 | 76 | 54 | 281 | 1140 | 933 | 7620 | 59 | 218 | 1310 |

CAL YR 1979 TOTAL 3638.22 MEAN 9.97 MAX 449 MIN .02 AC-FT 7220
WTR YR 1980 TOTAL 6030.60 MEAN 16.5 MAX 2920 MIN .00 AC-FT 11960

## 07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year. Chemical and biochemical analyses: October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: October 1968 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 51,100 micromhos July 30, 1978; minimum daily, 417 micromhos July 10, 1975.
WATER TEMPERATURES: Maximum daily, 38.0°C Oct. 14, 1968, June 13, 1975; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 43,700 micromhos Aug. 14; minimum daily, 597 micromhos June 11.
WATER TEMPERATURES: Maximum daily, 36.0°C June 6; minimum daily, 0.0°C Dec. 16, 17, Jan. 28-30.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 31... | 1130 | 7.3 | 2900 | 7.8 | 8.0 | 1100 | 14.5 | 136 | 18 | 18000 | 9400 |
| NOV 29... | 0945 | .73 | 35000 | 8.0 | .0 | 1.1 | 13.5 | 115 | 1.1 | K14 | K6 |
| DEC 19... | 1615 | .66 | 20600 | 8.1 | 10.0 | 16 | 12.0 | 125 | 3.3 | 24 | 54 |
| JAN 16... | 1700 | 1.8 | 23000 | 8.2 | 13.0 | 34 | 14.0 | 159 | 1.5 | 25 | 84 |
| FEB 28... | 0915 | .90 | 22500 | 8.1 | 6.0 | 5.6 | 12.8 | 123 | .7 | 220 | 170 |
| MAR 27... | 1315 | 18 | 23100 | 7.7 | 16.0 | 34 | 11.6 | 141 | 4.7 | 840 | 980 |
| APR 24... | 1730 | 104 | 870 | 7.7 | 15.0 | 23000 | 10.6 | 118 | 21 | 50000 | 42000 |
| MAY 14... | 1400 | .38 | 28000 | 8.1 | 17.0 | 3.8 | 12.4 | 157 | 2.3 | 190 | 96 |
| JUN 26... | 1230 | 3.1 | 12700 | 8.1 | 32.0 | 12 | 8.0 | 125 | 1.4 | 80 | K15 |
| JUL 24... | 0945 | .11 | 33800 | 8.0 | 24.0 | 23 | 8.0 | 118 | 1.0 | 480 | 120 |
| AUG 20... | 1530 | .01 | 39000 | 8.0 | 34.5 | 11 | 8.7 | 158 | 1.0 | 78 | K20 |
| SEP 04... | 1145 | .00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 31... | 550 | 450 | 160 | 36 | 450 | 8.4 | 9.7 | 120 | 0 | 580 | 570 |
| NOV 29... | 3600 | 3400 | 1000 | 260 | 7600 | 55 | 120 | 160 | 0 | 2700 | 12000 |
| DEC 19... | 2200 | 2000 | 570 | 180 | 3900 | 36 | 32 | 170 | 0 | 2200 | 5600 |
| JAN 16... | 2700 | 2500 | 750 | 190 | 4400 | 37 | 58 | 140 | 0 | 2500 | 7000 |
| FEB 28... | 2800 | 2600 | 760 | 210 | 4500 | 37 | 68 | 170 | 0 | 2300 | 7300 |
| MAR 27... | 2700 | 2600 | 780 | 190 | 4500 | 37 | 79 | 130 | 0 | 2100 | 7700 |
| APR 24... | 160 | 37 | 44 | 13 | 110 | 3.7 | 5.3 | 150 | 0 | 230 | 33 |
| MAY 14... | 3200 | 3100 | 910 | 230 | 5500 | 42 | 90 | 160 | 0 | 2000 | 9000 |
| JUN 26... | 1900 | 1800 | 530 | 140 | 2000 | 20 | 46 | 150 | 0 | 1900 | 2900 |
| JUL 24... | 3500 | 3300 | 1000 | 240 | 7200 | 53 | 120 | 170 | 0 | 2700 | 12000 |
| AUG 20... | 4200 | 4100 | 1200 | 280 | 8000 | 54 | 140 | 120 | 0 | 2700 | 14000 |
| SEP 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

## 07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 31... | .5 | 9.1 | 1850 | 1880 | .77 | .75 | .180 | -- | 4.0 | -- |
| NOV 29... | .6 | 27 | 25000 | 23800 | .07 | .06 | .230 | .150 | .33 | .19 |
| DEC 19... | .7 | 27 | 13800 | 12600 | .11 | .11 | .220 | .220 | .22 | .23 |
| JAN 16... | .9 | 26 | 15900 | 15000 | .03 | .03 | .090 | .080 | .00 | .00 |
| FEB 28... | .8 | 25 | 15500 | 15200 | .06 | .06 | .100 | .100 | .06 | .07 |
| MAR 27... | .7 | 19 | 15500 | 15400 | .34 | .03 | .480 | .220 | .62 | .26 |
| APR 24... | .6 | 9.8 | 467 | 522 | .59 | .56 | .260 | .250 | 27 | .32 |
| MAY 14... | .8 | 27 | 19100 | 17800 | .03 | .02 | .100 | .000 | .29 | .30 |
| JUN 26... | 1.1 | 26 | 8450 | 7620 | .07 | .07 | .140 | .140 | .66 | .27 |
| JUL 24... | .7 | 6.2 | 23200 | 23400 | .01 | .01 | .240 | .250 | .39 | .35 |
| AUG 20... | .7 | 18 | 27200 | 26400 | 2.0 | .07 | .460 | .000 | .03 | .67 |
| SEP 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | PHOS-PHORUS, DIS-SOLVED (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | CARBON, ORGANIC DIS-SOLVED (MG/L AS C) | CARBON, ORGANIC SUS-PENDED (MG/L AS C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 31... | 4.2 | .89 | 2.900 | .010 | -- | 20 | .6 | -- | -- | -- |
| NOV 29... | .56 | .34 | .010 | .030 | 3.7 | -- | -- | 6 | .01 | 39 |
| DEC 19... | .44 | .45 | .010 | .020 | 2.4 | -- | -- | 19 | .03 | 73 |
| JAN 16... | .02 | .08 | .000 | .020 | 3.9 | -- | -- | 32 | .16 | 33 |
| FEB 28... | .16 | .17 | .010 | .000 | -- | 2.3 | .6 | 37 | .09 | 56 |
| MAR 27... | 1.1 | .48 | .070 | .020 | 3.3 | -- | -- | 139 | 6.8 | 79 |
| APR 24... | 27 | .57 | 7.700 | .010 | 290 | -- | -- | 68600 | 19300 | 88 |
| MAY 14... | .39 | .30 | .010 | .010 | 3.4 | -- | -- | 5 | .01 | 61 |
| JUN 26... | .80 | .41 | .000 | .000 | -- | 4.1 | .4 | 117 | .98 | 82 |
| JUL 24... | .63 | .60 | .010 | .010 | 2.3 | -- | -- | 73 | .02 | 64 |
| AUG 20... | .49 | .67 | .030 | .020 | -- | 4.4 | .3 | 26 | .00 | 86 |
| SEP 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | TIME | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUS-PENDED TOTAL (UG/L AS AS) | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) | BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) | CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 31... | 1130 | 30 | 26 | 4 | 1200 | 800 | 400 | 0 | 0 | 0 | 88 |
| DEC 19... | 1615 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FEB 28... | 0915 | 3 | 1 | 2 | 500 | 200 | 300 | 0 | 0 | 0 | 10 |
| MAR 27... | 1315 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 14... | 1400 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 26... | 1230 | 4 | 0 | 4 | 100 | 0 | 200 | 0 | 0 | 1 | 0 |
| AUG 20... | 1530 | 5 | 1 | 4 | 200 | 0 | 300 | 0 | 0 | 0 | 50 |

### 07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) | CHROMIUM, DISSOLVED (UG/L AS CR) | COBALT, TOTAL RECOVERABLE (UG/L AS CO) | COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) | COBALT, DISSOLVED (UG/L AS CO) | COPPER, TOTAL RECOVERABLE (UG/L AS CU) | COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) | COPPER, DISSOLVED (UG/L AS CU) | IRON, TOTAL RECOVERABLE (UG/L AS FE) | IRON, SUSPENDED RECOVERABLE (UG/L AS FE) | IRON, DISSOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 31... | 88 | 0 | 63 | 63 | 0 | -- | -- | 5 | 53000 | 53000 | 20 |
| DEC 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FEB 28... | 0 | 20 | 0 | 0 | 0 | 5 | 5 | 0 | 210 | 120 | 90 |
| MAR 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 14... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 26... | 0 | 10 | 0 | 0 | 0 | 3 | 1 | 2 | 50 | 20 | 30 |
| AUG 20... | 20 | 30 | 3 | 2 | 1 | 8 | 7 | 1 | 300 | 140 | 160 |

| DATE | LEAD, TOTAL RECOVERABLE (UG/L AS PB) | LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) | MANGANESE, SUSPENDED RECOV. (UG/L AS MN) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY TOTAL RECOVERABLE (UG/L AS HG) | MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) | MERCURY DISSOLVED (UG/L AS HG) | NICKEL, TOTAL RECOVERABLE (UG/L AS NI) | NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 31... | 90 | 90 | 0 | 2800 | 2800 | 50 | 1.2 | .0 | 1.4 | 160 | 160 |
| DEC 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FEB 28... | 0 | 0 | 0 | -- | -- | 380 | .0 | .0 | .0 | 6 | 6 |
| MAR 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 14... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 26... | 2 | 1 | 1 | 190 | 10 | 180 | .0 | .0 | .0 | 1 | 0 |
| AUG 20... | 3 | 1 | 2 | 1100 | 100 | 1000 | .0 | .0 | .4 | 6 | 6 |

| DATE | NICKEL, DISSOLVED (UG/L AS NI) | SELENIUM, TOTAL (UG/L AS SE) | SELENIUM, SUSPENDED TOTAL (UG/L AS SE) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, TOTAL RECOVERABLE (UG/L AS AG) | SILVER, SUSPENDED RECOVERABLE (UG/L AS AG) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, TOTAL RECOVERABLE (UG/L AS ZN) | ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 31... | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 360 | 350 | 10 |
| DEC 19... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| FEB 28... | 0 | 1 | 0 | 1 | 2 | 2 | 0 | -- | -- | 40 |
| MAR 27... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| MAY 14... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| JUN 26... | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 10 | 0 | 10 |
| AUG 20... | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 60 | 20 | 40 |

## 07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX--Continued

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| DATE | NOV 29,79 | | MAR 1,80 | | MAY 14,80 | | JUN 26,80 | | JUL 24,80 | | AUG 20,80 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TIME | 0945 | | 0000 | | 1400 | | 1230 | | 0945 | | 1530 | |
| TOTAL CELLS/ML | 290 | | 19000 | | 19000 | | 870 | | 610 | | 1100 | |
| DIVERSITY: DIVISION | 0.0 | | 0.0 | | 0.0 | | 1.5 | | 0.8 | | 0.7 | |
| .CLASS | 0.0 | | 0.0 | | 0.0 | | 1.5 | | 0.8 | | 0.7 | |
| ..ORDER | 0.0 | | 0.0 | | 0.0 | | 2.1 | | 0.8 | | 0.7 | |
| ...FAMILY | 0.9 | | 0.7 | | 0.2 | | 2.2 | | 0.9 | | 1.0 | |
| ....GENUS | 0.9 | | 0.7 | | 0.2 | | 2.6 | | 0.9 | | 1.0 | |
| ORGANISM | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT |
| CHLOROPHYTA (GREEN ALGAE) | | | | | | | | | | | | |
| .CHLOROPHYCEAE | | | | | | | | | | | | |
| ..CHLOROCOCCALES | | | | | | | | | | | | |
| ...OOCYSTACEAE | | | | | | | | | | | | |
| ....ANKISTRODESMUS | -- | - | -- | - | -- | - | -- | - | 13 | 2 | -- | - |
| ....KIRCHNERIELLA | -- | - | -- | - | -- | - | -- | - | 26 | 4 | -- | - |
| ...SCENEDESMACEAE | | | | | | | | | | | | |
| ....CRUCIGENIA | -- | - | -- | - | -- | - | 52 | 6 | -- | - | -- | - |
| ..VOLVOCALES | | | | | | | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | | | | | | | |
| ....CHLAMYDOMONAS | -- | - | -- | - | -- | - | 100 | 12 | 13 | 2 | -- | - |
| ....CHLOROGONIUM | -- | - | -- | - | -- | - | 270# | 31 | -- | - | -- | - |
| ..ZYGNEMATALES | | | | | | | | | | | | |
| ...DESMIDIACEAE | | | | | | | | | | | | |
| ....COSMARIUM | -- | - | -- | - | -- | - | 13 | 1 | -- | - | -- | - |
| CHRYSOPHYTA | | | | | | | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | | | | | | | |
| ..CENTRALES | | | | | | | | | | | | |
| ...COSCINODISCACEAE | | | | | | | | | | | | |
| ....CYCLOTELLA | -- | - | -- | - | -- | - | 65 | 7 | -- | - | -- | - |
| ..PENNALES | | | | | | | | | | | | |
| ...ACHNANTHACEAE | | | | | | | | | | | | |
| ....ACHNANTHES | -- | - | 180 | 1 | -- | - | -- | - | -- | - | -- | - |
| ...CYMBELLACEAE | | | | | | | | | | | | |
| ....CYMBELLA | -- | - | 360 | 2 | -- | - | -- | - | -- | - | -- | - |
| ...NAVICULACEAE | | | | | | | | | | | | |
| ....ENTOMONEIS | -- | - | -- | - | 190 | 1 | -- | - | -- | - | -- | - |
| ....NAVICULA | 87# | 30 | 2400 | 12 | 380 | 2 | 39 | 4 | 13 | 2 | 65 | 6 |
| ...NITZSCHIACEAE | | | | | | | | | | | | |
| ....NITZSCHIA | 200# | 70 | 16000# | 85 | 19000# | 97 | 170# | 19 | 26 | 4 | 770# | 73 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | | | | | | | |
| .CYANOPHYCEAE | | | | | | | | | | | | |
| ..CHROOCOCCALES | | | | | | | | | | | | |
| ...CHROOCOCCACEAE | | | | | | | | | | | | |
| ....AGMENELLUM | -- | - | -- | - | -- | - | 160# | 18 | -- | - | -- | - |
| ..HORMOGONALES | | | | | | | | | | | | |
| ...OSCILLATORIACEAE | | | | | | | | | | | | |
| ....OSCILLATORIA | -- | - | -- | - | -- | - | -- | - | 520# | 85 | 220# | 21 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 90.90 | 2940 | 1890 | 464 | 780 | 190 | 410 | 101 | 440 |
| NOV. | 1979 | 29.42 | 18100 | 11900 | 945 | 5400 | 432 | 2000 | 159 | * |
| DEC. | 1979 | 20.93 | 25000 | 16600 | 937 | 7800 | 440 | 2600 | 144 | * |
| JAN. | 1980 | 38.41 | 21400 | 14100 | 1460 | 6500 | 669 | 2300 | 243 | * |
| FEB. | 1980 | 27.12 | 22200 | 14600 | 1070 | 6700 | 491 | 2400 | 177 | * |
| MAR. | 1980 | 141.82 | 7620 | 5000 | 1910 | 2300 | 867 | 860 | 331 | 970 |
| APR. | 1980 | 572.53 | 3140 | 2030 | 3130 | 850 | 1320 | 420 | 652 | 450 |
| MAY | 1980 | 470.50 | 2980 | 1920 | 2440 | 790 | 1000 | 420 | 530 | 440 |
| JUNE | 1980 | 3839.84 | 1500 | 958 | 9930 | 390 | 4000 | 220 | 2250 | 230 |
| JULY | 1980 | 29.81 | 7880 | 5150 | 415 | 2300 | 185 | 930 | 75 | 1000 |
| AUG. | 1980 | 110.12 | 2570 | 1650 | 491 | 670 | 200 | 360 | 108 | 390 |
| SEPT | 1980 | 659.20 | 1630 | 1050 | 1860 | 420 | 752 | 240 | 420 | 250 |
| TOTAL | | 6030.60 | ** | ** | 25100 | ** | 10500 | ** | 5190 | ** |
| WTD. AVG. | | 17 | 2380 | 1540 | ** | 650 | ** | 320 | ** | 340 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 32800 | 6640 | 31100 | 26700 | 23800 | 27300 | 10000 | 11800 | 8060 | 23400 | --- | --- |
| 2 | 32400 | 10900 | 29600 | 21600 | 23300 | 27900 | 11700 | 12000 | 11400 | 27300 | --- | --- |
| 3 | 32700 | 15200 | 27000 | 23100 | 20800 | 26100 | 11900 | 12300 | 12800 | 26500 | --- | --- |
| 4 | 32200 | 18800 | 27200 | 22500 | 20000 | 22200 | 15000 | 13300 | 11000 | 21000 | --- | --- |
| 5 | 31700 | 20600 | 26400 | 22200 | 21700 | 24700 | 15400 | 14000 | 4000 | 31500 | --- | --- |
| 6 | 31900 | 23400 | 25700 | 21000 | 24300 | 23700 | 17200 | 14100 | 5220 | 32800 | 3500 | 15000 |
| 7 | 32500 | 24100 | 24700 | 22200 | 23100 | 23800 | 19800 | 14800 | 8940 | 34800 | 7190 | 38600 |
| 8 | 32600 | 22000 | 25700 | 20900 | 20200 | 24400 | 22000 | 11700 | 17600 | 35900 | 30200 | --- |
| 9 | 32800 | 19500 | 26400 | 29800 | 22200 | 25500 | 25600 | 13900 | 22900 | 36700 | 37700 | 3560 |
| 10 | 33400 | 22900 | 24600 | 31200 | 24300 | 25200 | 22600 | 14500 | 15000 | 36600 | --- | 17500 |
| 11 | 33100 | 23600 | 24900 | 28600 | 22500 | 24000 | 23800 | 22200 | 597 | 38500 | --- | 25000 |
| 12 | 32000 | 23800 | 26200 | 25000 | 19600 | 23900 | 27000 | 27600 | 1040 | --- | --- | --- |
| 13 | 31900 | 24100 | 26400 | 21700 | 18400 | 24400 | 27200 | 27900 | 1600 | --- | --- | 1250 |
| 14 | 31800 | 23800 | 23300 | 20100 | 18800 | 28500 | 24200 | 22500 | 2070 | --- | 43700 | 1070 |
| 15 | 32100 | 24400 | 23600 | 20200 | 19800 | 26600 | 25000 | 1520 | 2570 | --- | 1950 | 4520 |
| 16 | 32000 | 24200 | 23400 | 23100 | 20400 | 26700 | 26600 | 2500 | 3620 | --- | 5820 | 14900 |
| 17 | 31800 | 23400 | 33200 | 23000 | 26500 | 29900 | 28500 | 5490 | 3930 | --- | 11200 | 20700 |
| 18 | 32400 | 23800 | 30800 | 22000 | 18400 | 27300 | 29300 | 6840 | 4810 | --- | 26300 | 22400 |
| 19 | 32100 | 24800 | 24300 | 21800 | 19300 | 26900 | 28500 | 9040 | 5450 | --- | 29700 | 27000 |
| 20 | 32700 | 24700 | 23900 | 16400 | 20600 | 26400 | 27700 | 9800 | 5980 | --- | 37400 | 28700 |
| 21 | 33900 | 24000 | 22800 | 13400 | 25800 | 28200 | 31200 | 11500 | 4500 | 3500 | 38500 | 33800 |
| 22 | 35000 | 31000 | 23200 | 19700 | 22500 | 28100 | 28000 | 12400 | 8630 | 22900 | 12500 | 35600 |
| 23 | 36000 | 31100 | 23800 | 20500 | 23200 | 26900 | 23400 | 15100 | 9520 | 34100 | 17100 | 40300 |
| 24 | 32900 | 27400 | 24100 | 21900 | 23800 | 24800 | 1400 | 22800 | 9920 | 34300 | 29300 | 38900 |
| 25 | 33000 | 26400 | 24500 | 22100 | 22800 | 27600 | 2880 | 26100 | 11900 | --- | 39000 | 38800 |
| 26 | 33300 | 26700 | 23400 | 21200 | 23200 | 23400 | 4960 | 25300 | 13600 | --- | --- | 22100 |
| 27 | 33700 | 27500 | 21500 | 20900 | 22800 | 2000 | 7070 | 10000 | 15200 | --- | --- | 18200 |
| 28 | 34300 | 27300 | 22400 | 29400 | 23200 | 1700 | 8820 | 1480 | 19200 | --- | --- | 21100 |
| 29 | 31500 | 31500 | 22500 | 29900 | 23400 | 4400 | 10900 | 1170 | 17500 | --- | --- | 24700 |
| 30 | 2270 | 30800 | 22600 | 24100 | --- | 5890 | 7500 | 4110 | 22200 | --- | --- | 27800 |
| 31 | 3410 | --- | 23600 | 23700 | --- | 6960 | --- | 5820 | --- | --- | --- | --- |
| MEAN | 30800 | 23600 | 25300 | 22900 | 22000 | 22400 | 18800 | 13000 | 9360 | 29300 | 23200 | 22700 |

07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22.0 | 7.0 | 9.0 | 10.0 | 1.0 | 6.0 | 22.0 | 21.0 | 24.0 | 35.0 | --- | --- |
| 2 | 23.0 | 14.0 | 5.0 | 7.0 | 8.0 | 5.0 | 18.0 | 20.0 | 25.0 | 35.0 | --- | --- |
| 3 | 22.0 | 15.0 | 10.0 | 10.0 | 4.0 | 11.0 | 15.0 | 22.0 | 26.0 | 32.0 | --- | --- |
| 4 | 23.0 | 15.0 | 15.0 | 9.0 | 11.0 | 17.0 | 21.0 | 26.0 | 34.0 | 33.0 | --- | --- |
| 5 | 23.0 | 16.0 | 16.0 | 5.0 | 7.0 | 10.0 | 19.0 | 29.0 | 21.0 | 33.0 | --- | --- |
| 6 | 27.0 | 17.0 | 12.0 | 11.0 | 10.0 | 16.0 | 21.0 | 25.0 | 36.0 | 33.0 | 28.0 | 29.0 |
| 7 | 21.0 | 9.0 | 13.0 | 9.0 | 7.0 | 15.0 | 23.0 | 26.0 | 23.0 | 31.0 | 28.0 | 30.0 |
| 8 | 28.0 | 19.0 | 10.0 | 5.0 | 5.0 | 15.0 | 17.0 | 21.0 | 25.0 | 32.0 | 30.0 | --- |
| 9 | 18.0 | 9.0 | 5.0 | 6.0 | 5.0 | 14.0 | 18.0 | 16.0 | 28.0 | 30.0 | 30.0 | 23.0 |
| 10 | 20.0 | 6.0 | 15.0 | 9.0 | 5.0 | 17.0 | 25.0 | 23.0 | 23.0 | 31.0 | --- | 22.0 |
| 11 | 25.0 | 9.0 | 7.0 | 5.0 | 9.0 | 12.0 | 19.0 | 22.0 | 20.0 | 33.0 | --- | 20.0 |
| 12 | 21.0 | 10.0 | 5.0 | 10.0 | 6.0 | 18.0 | 8.0 | 15.0 | 25.0 | --- | --- | --- |
| 13 | 21.0 | 15.0 | 4.0 | 5.0 | 12.0 | 18.0 | 12.0 | 24.0 | 26.0 | --- | --- | 30.0 |
| 14 | 19.0 | 15.0 | 8.0 | 11.0 | 10.0 | 16.0 | 18.0 | 16.0 | 27.0 | --- | 28.0 | 20.0 |
| 15 | 23.0 | 16.0 | 9.0 | 11.0 | 7.0 | 20.0 | 25.0 | 14.0 | 28.0 | --- | 26.0 | 25.0 |
| 16 | 25.0 | 13.0 | .0 | 10.0 | 3.0 | 13.0 | 18.0 | 19.0 | 30.0 | --- | 29.0 | 27.0 |
| 17 | 20.0 | 18.0 | .0 | 11.0 | 5.0 | 15.0 | 17.0 | 20.0 | 29.0 | --- | 25.0 | 25.0 |
| 18 | 18.0 | 14.0 | 14.0 | 9.0 | 10.0 | 15.0 | 20.0 | 18.0 | 35.0 | --- | 27.0 | 20.0 |
| 19 | 22.0 | 17.0 | 7.0 | 5.0 | 15.0 | 22.0 | 22.0 | 20.0 | 30.0 | --- | 28.0 | 30.0 |
| 20 | 20.0 | 16.0 | 4.0 | 4.0 | 17.0 | 17.0 | 21.0 | 28.0 | 30.0 | --- | 29.0 | 26.0 |
| 21 | 18.0 | 10.0 | 13.0 | 7.0 | 11.0 | 16.0 | 26.0 | 25.0 | 30.0 | 29.0 | 27.0 | 21.0 |
| 22 | 15.0 | 6.0 | 11.0 | 6.0 | 15.0 | 10.0 | 26.0 | 26.0 | 29.0 | 33.0 | 32.0 | 20.0 |
| 23 | 17.0 | 12.0 | 11.0 | 3.0 | 16.0 | 15.0 | 26.0 | 30.0 | 35.0 | 31.0 | 32.0 | 22.0 |
| 24 | 18.0 | 14.0 | 11.0 | 9.0 | 12.0 | 16.0 | 20.0 | 21.0 | 35.0 | 26.0 | 24.0 | 25.0 |
| 25 | 17.0 | 10.0 | 7.0 | 10.0 | 16.0 | 16.0 | 12.0 | 25.0 | 23.0 | --- | 29.0 | 19.0 |
| 26 | 21.0 | 13.0 | 10.0 | 3.0 | 15.0 | 20.0 | 15.0 | 29.0 | 35.0 | --- | --- | 17.0 |
| 27 | 15.0 | 11.0 | 11.0 | 1.0 | 19.0 | 15.0 | 18.0 | 25.0 | 32.0 | --- | --- | 17.0 |
| 28 | 15.0 | 6.0 | 8.0 | .0 | 20.0 | 11.0 | 25.0 | 26.0 | 30.0 | --- | --- | 15.0 |
| 29 | 20.0 | 6.0 | 6.0 | .0 | 5.0 | 9.0 | 27.0 | 27.0 | 32.0 | --- | --- | 27.0 |
| 30 | 9.0 | 8.0 | 3.0 | .0 | --- | 15.0 | 20.0 | 30.0 | 32.0 | --- | --- | 29.0 |
| 31 | 6.0 | --- | 11.0 | 4.0 | --- | 8.0 | --- | 29.0 | --- | --- | --- | --- |
| MEAN | 19.5 | 12.0 | 8.5 | 6.5 | 10.0 | 14.5 | 20.0 | 23.0 | 28.5 | 32.0 | 28.5 | 23.5 |

## 07298100 MACKENZIE RESERVOIR NEAR SILVERTON, TX

LOCATION.--Lat 34°32'43", long 101°26'16", Briscoe County, Hydrologic Unit 11120104, at upstream side of dam on Tule Creek, 0.9 mi (1.4 km) upstream from Rock Creek, 9.5 mi (15.3 km) northwest of Silverton, and 22.7 mi (36.5 km) upstream from mouth.

DRAINAGE AREA.--1,053 mi$^2$ (2,727 km$^2$), of which 904 mi$^2$ (2,341 km$^2$) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

REVISED RECORDS.--WDR TX-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Freese and Nichols, Inc, Consulting Engineers bench mark).

REMARKS.--The reservoir is formed by a rolled earthfill dam 2,100 ft (640 m) long. The dam was completed in August 1974 and storage began in June 1974. The uncontrolled emergency spillway is an open cut channel just beyond the right end of dam. The service spillway is an uncontrolled ogee-type weir across a concrete chute at the right end of dam. A 30-inch (762 mm) gated outlet concrete pipe discharges into a valve vault at the downstream toe of the dam and then into the creek bed downstream. When facilities are completed, water will be used for municipal, industrial, and recreational purposes by the cities of Floydada, Silverton, and Tulia. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

|  | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam.......................................................... | 3,127.0 | - |
| Crest of spillway..................................................... | 3,111.0 | 57,770 |
| Crest of spillway with ogee weir...................................... | 3,100.0 | 46,080 |
| Lowest gated outlet (invert).......................................... | 2,961.0 | 17 |

COOPERATION.--The area and capacity tables 1-A and 1-C are furnished by the MacKenzie Municipal Water Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 15,670 acre-ft (19.3 hm$^3$) June 14, 1978, elevation, 3,047.51 ft (928.881 m); minimum, 598 acre-ft (0.737 hm$^3$) Oct. 1, 2, 1974, elevation, 2,980.61 ft (908.490 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 14,800 acre-ft (18.2 hm$^3$) Oct. 1 at 0015 hours, elevation, 3,045.43 ft (928.247 m); minimum, 13,570 acre-ft (16.7 hm$^3$) Sept. 26, elevation, 3,042.37 ft (927.314 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

|  |  |  |  |
|---|---|---|---|
| 3,042.0 | 13,430 | 3,044.0 | 14,220 |
| 3,043.0 | 13,820 | 3,045.0 | 14,620 |
|  |  | 3,046.0 | 15,030 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 14780 | 14760 | 14650 | 14570 | 14530 | 14590 | 14420 | 14350 | 14280 | 14290 | 13990 | 13770 |
| 2 | 14780 | 14760 | 14640 | 14570 | 14550 | 14580 | 14420 | 14340 | 14280 | 14270 | 13990 | 13770 |
| 3 | 14770 | 14750 | 14660 | 14580 | 14550 | 14570 | 14420 | 14330 | 14280 | 14260 | 13980 | 13760 |
| 4 | 14760 | 14750 | 14640 | 14570 | 14570 | 14570 | 14410 | 14330 | 14280 | 14260 | 13970 | 13740 |
| 5 | 14750 | 14730 | 14640 | 14570 | 14570 | 14550 | 14390 | 14320 | 14280 | 14240 | 13970 | 13740 |
| 6 | 14740 | 14740 | 14640 | 14590 | 14550 | 14550 | 14380 | 14300 | 14280 | 14230 | 13960 | 13740 |
| 7 | 14730 | 14740 | 14610 | 14570 | 14590 | 14610 | 14410 | 14290 | 14280 | 14220 | 13960 | 13720 |
| 8 | 14720 | 14730 | 14620 | 14560 | 14560 | 14610 | 14430 | 14300 | 14280 | 14210 | 13950 | 13720 |
| 9 | 14710 | 14720 | 14640 | 14550 | 14570 | 14600 | 14450 | 14280 | 14280 | 14190 | 13940 | 13720 |
| 10 | 14710 | 14710 | 14610 | 14570 | 14550 | 14590 | 14440 | 14260 | 14280 | 14180 | 13940 | 13710 |
| 11 | 14700 | 14740 | 14610 | 14550 | 14540 | 14570 | 14440 | 14250 | 14280 | 14170 | 13930 | 13700 |
| 12 | 14690 | 14730 | 14610 | 14550 | 14560 | 14540 | 14430 | 14270 | 14260 | 14160 | 13920 | 13700 |
| 13 | 14680 | 14730 | 14610 | 14540 | 14570 | 14530 | 14430 | 14280 | 14260 | 14150 | 13920 | 13700 |
| 14 | 14680 | 14730 | 14600 | 14540 | 14570 | 14510 | 14430 | 14290 | 14250 | 14130 | 13910 | 13690 |
| 15 | 14670 | 14710 | 14600 | 14550 | 14580 | 14490 | 14420 | 14290 | 14230 | 14120 | 13900 | 13680 |
| 16 | 14670 | 14730 | 14600 | 14540 | 14590 | 14470 | 14420 | 14280 | 14220 | 14110 | 13900 | 13680 |
| 17 | 14670 | 14730 | 14600 | 14540 | 14590 | 14460 | 14410 | 14280 | 14320 | 14100 | 13890 | 13670 |
| 18 | 14670 | 14710 | 14600 | 14550 | 14610 | 14440 | 14410 | 14280 | 14360 | 14080 | 13880 | 13650 |
| 19 | 14660 | 14720 | 14590 | 14550 | 14640 | 14420 | 14400 | 14280 | 14360 | 14070 | 13880 | 13650 |
| 20 | 14650 | 14700 | 14610 | 14570 | 14630 | 14430 | 14400 | 14280 | 14350 | 14060 | 13870 | 13640 |
| 21 | 14650 | 14710 | 14600 | 14570 | 14630 | 14420 | 14400 | 14280 | 14410 | 14060 | 13860 | 13630 |
| 22 | 14620 | 14680 | 14590 | 14560 | 14610 | 14420 | 14390 | 14280 | 14410 | 14050 | 13850 | 13620 |
| 23 | 14610 | 14710 | 14590 | 14560 | 14590 | 14400 | 14390 | 14280 | 14400 | 14040 | 13850 | 13610 |
| 24 | 14630 | 14680 | 14580 | 14560 | 14610 | 14400 | 14380 | 14280 | 14380 | 14040 | 13840 | 13600 |
| 25 | 14610 | 14690 | 14580 | 14560 | 14610 | 14420 | 14370 | 14280 | 14370 | 14040 | 13830 | 13590 |
| 26 | 14610 | 14670 | 14590 | 14550 | 14610 | 14420 | 14360 | 14280 | 14370 | 14030 | 13820 | 13570 |
| 27 | 14610 | 14670 | 14590 | 14550 | 14610 | 14450 | 14360 | 14280 | 14340 | 14030 | 13810 | 13590 |
| 28 | 14600 | 14660 | 14610 | 14540 | 14620 | 14450 | 14340 | 14280 | 14320 | 14020 | 13810 | 13590 |
| 29 | 14750 | 14650 | 14590 | 14540 | 14600 | 14460 | 14340 | 14280 | 14310 | 14010 | 13800 | 13590 |
| 30 | 14770 | 14660 | 14580 | 14540 | --- | 14440 | 14340 | 14280 | 14300 | 14010 | 13790 | 13610 |
| 31 | 14780 | --- | 14570 | 14540 | --- | 14440 | --- | 14280 | --- | 14000 | 13780 | --- |
| MAX | 14780 | 14760 | 14660 | 14590 | 14640 | 14610 | 14450 | 14350 | 14410 | 14290 | 13990 | 13770 |
| MIN | 14600 | 14650 | 14570 | 14540 | 14530 | 14400 | 14340 | 14250 | 14220 | 14000 | 13780 | 13570 |
| (†) | 3045.37 | 3045.09 | 3044.86 | 3044.80 | 3044.94 | 3044.54 | 3044.31 | 3044.16 | 3044.20 | 3043.45 | 3042.90 | 3042.45 |
| (‡) | -20 | -120 | -90 | -30 | +60 | -160 | -100 | -60 | +20 | -300 | -220 | -170 |

CAL YR 1979 MAX 15070 MIN 14500 ‡ -140
WTR YR 1980 MAX 14780 MIN 13570 ‡ -1190

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

## 07298100 MACKENZIE RESERVOIR NEAR SILVERTON, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1974 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 1345 | 464 | 6.0 | 150 | 0 | 39 | 13 | 31 | 1.1 |
| JUL | | | | | | | | | |
| 25... | 1225 | 491 | 26.5 | 160 | 1 | 38 | 15 | 39 | 1.4 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | |
| 05... | 11 | 190 | 0 | 72 | 10 | 1.2 | 2.0 | 273 |
| JUL | | | | | | | | |
| 25... | 12 | 190 | 0 | 78 | 9.6 | 1.2 | .3 | 286 |

## 07298200 TULE CREEK NEAR SILVERTON, TX

**LOCATION.**--Lat 34°32'36", long 101°25'46", Briscoe County, Hydrologic Unit 11120104, on downstream side of bridge on State Highway 207, 0.1 mi (0.2 km) downstream from Rock Creek, 1.0 mi (1.6 km) downstream from MacKenzie Dam, 8.8 mi (14.2 km) northwest of Silverton, 17.7 mi (28.5 km) downstream from South Tule Draw, and 21.7 mi (34.9 km) up- stream from mouth.

**DRAINAGE AREA.**--1,150 mi² (2,980 km²), of which 960 mi² (2,490 km²) probably is noncontributing.

**PERIOD OF RECORD.**--July 1964 to current year.
Water-quality records: Chemical analyses: October 1967 to September 1975. Water temperatures: October 1967 to September 1969.

**GAGE.**--Water-stage recorder. Datum of gage is 2,852.44 ft (869.424 m) State Department of Highways and Public Transportation datum.

**REMARKS.**--Records poor. Since June 1974, flow is regulated by MacKenzie Reservoir 1.0 mi (1.6 km) upstream. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--9 years (water years 1965-73) prior to completion of MacKenzie Dam, 9.24 ft³/s (0.262 m³/s), 6,690 acre-ft/yr (8.25 hm³/s); 7 years (water years 1974-80) regulated, 2.17 ft³/s (0.061 m³/s), 1,570 acre-ft/yr (1.94 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 12,800 ft³/s (362 m³/s) May 20, 1977, gage height, 14.5 ft (4.42 m), from floodmarks; no flow for many days each year.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since 1890, occurred in 1892 (stage and discharge unknown); second highest stage occurred September 1926 (stage and discharge unknown); third highest stage occurred May 10, 1934, gage height, 20.3 ft (6.19 m), discharge unknown, from information by local residents.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 1,170 ft³/s (33.1 m³/s) June 18 at 0015 hours, gage height, 5.49 ft (1.673 m); no flow for many days.

**REVISIONS.**--The maximum discharge for the water year 1979 has been revised to 1,140, ft³/s (32.3 m³/s) July 25, 1979, gage height 5.54 ft (1.689 m), superseding figure published in the report for 1979. These supersede figures published in the report for 1979. Revised daily and monthly discharge, in cubic feet per second, for the 1979 water year are shown below. These figures supersede those published in the report for 1979.

| | |
|---|---|
| Mar. 21, 1979................. | 30 |
| 22 ...................... | 8.9 |
| June 9 ...................... | 189 |
| July 18 ...................... | 49 |
| 25 ...................... | 91 |

| Month | | Cfs-days | Maximum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| March 1979 | ........ | 40.12 | 30 | 1.29 | 80 |
| June | ........ | 198.33 | 189 | 6.61 | 393 |
| July | ........ | 165.32 | 91 | 5.33 | 328 |
| WTR YR | ........ | 576.50 | 189 | 1.58 | 1,140 |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .27 | .33 | .07 | .04 | .40 | .12 | .00 | .00 | .00 | .00 | .00 |
| 2 | .00 | .08 | .23 | .08 | .06 | .33 | 1.0 | .00 | .00 | .00 | .00 | .00 |
| 3 | .00 | .06 | .31 | .06 | .10 | .96 | .08 | .00 | .00 | .00 | .00 | .00 |
| 4 | .00 | .04 | .34 | .06 | .15 | .69 | .13 | .00 | .00 | .00 | .00 | .00 |
| 5 | .00 | .02 | .32 | .08 | .20 | .18 | .06 | .00 | .00 | .00 | .00 | .00 |
| 6 | .00 | .02 | .27 | .09 | .33 | .23 | .02 | .16 | .00 | .00 | .00 | .00 |
| 7 | .00 | .01 | .27 | .04 | .93 | .15 | .00 | .96 | .00 | .00 | .00 | .00 |
| 8 | .00 | .01 | .27 | .09 | 1.5 | .01 | .00 | .00 | .00 | .00 | .00 | .00 |
| 9 | .00 | .01 | .20 | .15 | 1.6 | .05 | .00 | .00 | .00 | .00 | .00 | .00 |
| 10 | .00 | .01 | .15 | .18 | 1.5 | .09 | .00 | .00 | .00 | .00 | .00 | .00 |
| 11 | .00 | 1.4 | .10 | .10 | 1.3 | .74 | .00 | .00 | .00 | .00 | .00 | .00 |
| 12 | .00 | 7.0 | .08 | .13 | 1.5 | 1.5 | .00 | .00 | .00 | .00 | .00 | .00 |
| 13 | .00 | .75 | .06 | .15 | 1.6 | .11 | .00 | .00 | .00 | .00 | .00 | .00 |
| 14 | .00 | .60 | .04 | .17 | 1.4 | .07 | .00 | .03 | .00 | .00 | .45 | .00 |
| 15 | .00 | .46 | .03 | .22 | .90 | .07 | .00 | 32 | .00 | .00 | 1.9 | .00 |
| 16 | .00 | .36 | .01 | .23 | .70 | .03 | .00 | .00 | .00 | .00 | .00 | .00 |
| 17 | .00 | .42 | .01 | .27 | .60 | .00 | .00 | .00 | 24 | .00 | .00 | .00 |
| 18 | .00 | .35 | .01 | .36 | .70 | .05 | .00 | .00 | 70 | .00 | .00 | .00 |
| 19 | .00 | .27 | .01 | .50 | .80 | .10 | .00 | .00 | .00 | .00 | .00 | .00 |
| 20 | .00 | .31 | .01 | 1.4 | 1.0 | .08 | .00 | .00 | .00 | .00 | .00 | .00 |
| 21 | .00 | .19 | .02 | .56 | .89 | .14 | .00 | .00 | 12 | .00 | .00 | .00 |
| 22 | .00 | .18 | .03 | .31 | .77 | .20 | .49 | .00 | .03 | .00 | .00 | .00 |
| 23 | .00 | .32 | .05 | .15 | .45 | .71 | 1.7 | .00 | .00 | .00 | .00 | .00 |
| 24 | .00 | .43 | .06 | .17 | .74 | .34 | 1.9 | .00 | .00 | .00 | .00 | .00 |
| 25 | .00 | .28 | .13 | .21 | .74 | .74 | .01 | .00 | .00 | .00 | .00 | .00 |
| 26 | .00 | .28 | .22 | .15 | .77 | 1.1 | .00 | .00 | .00 | 3.2 | .00 | .00 |
| 27 | .00 | .26 | .27 | .11 | .61 | 1.7 | .00 | .00 | .00 | .00 | .00 | .00 |
| 28 | .00 | .18 | .09 | .08 | .59 | 1.2 | .00 | .00 | .00 | .00 | .00 | .00 |
| 29 | .00 | .17 | .06 | .06 | .49 | 1.1 | .00 | .00 | .00 | .00 | .00 | .00 |
| 30 | 92 | .29 | .05 | .05 | --- | .91 | .00 | .00 | .00 | .00 | .00 | .00 |
| 31 | 2.8 | --- | .03 | .04 | --- | .58 | --- | .00 | --- | .00 | .00 | --- |
| TOTAL | 94.80 | 15.03 | 4.06 | 6.32 | 22.96 | 14.56 | 5.51 | 33.15 | 106.03 | 3.20 | 2.35 | .00 |
| MEAN | 3.06 | .50 | .13 | .20 | .79 | .47 | .18 | 1.07 | 3.53 | .10 | .076 | .000 |
| MAX | 92 | 7.0 | .34 | 1.4 | 1.6 | 1.7 | 1.9 | 32 | 70 | 3.2 | 1.9 | .00 |
| MIN | .00 | .01 | .01 | .04 | .04 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| AC-FT | 188 | 30 | 8.1 | 13 | 46 | 29 | 11 | 66 | 210 | 6.3 | 4.7 | .00 |

CAL YR 1979 TOTAL 612.57 MEAN 1.68 MAX 189 MIN .00 AC-FT 1220
WTR YR 1980 TOTAL 307.97 MEAN .84 MAX 92 MIN .00 AC-FT 611

## 07299200 PRAIRIE DOG TOWN FORK RED RIVER NEAR LAKEVIEW, TX

LOCATION.--Lat 34°34'23", long 100°44'43", Hall County, Hydrologic Unit 11120105, on left bank at downstream side of bridge on Farm Road 657, 7.6 mi (12.2 km) southwest of Lakeview, 8.6 mi (13.8 km) upstream from Little Red River, 13.3 mi (21.4 km) downstream from former gage near Brice, and at mile 1,092.5 (1,757.8 km).

DRAINAGE AREA.--6,792 mi$^2$ (17,591 km$^2$), of which 4,769 mi$^2$ (12,352 km$^2$) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1963 to September 1980 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,926.41 ft (587.170 m) National Geodetic Vertical Datum of 1929. Aug. 29 to Dec. 12, 1968, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records poor. Several small diversions above station. Flow is affected at times by discharge from flood-detention pools of nine floodwater-retarding structures with combined detention capacity of 13,540 acre-ft (16.7 hm$^3$). These structures control runoff from 55.8 mi$^2$ (144.5 km$^2$).

AVERAGE DISCHARGE.--17 years (water years 1964-80), 76.1 ft$^3$/s (2.155 m$^3$/s), 0.51 in/yr (13 mm/yr), 55,130 acre-ft/yr (68.0 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,000 ft$^3$/s (2,690 m$^3$/s) May 20, 1977, gage height, 11.1 ft (3.38 m), from floodmark, from rating curve extended above 51,000 ft$^3$/s (1,440 m$^3$/s) on basis of slope-area measurement at gage height 9.10 ft (2.774 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1906, 14.8 ft (4.51 m) occurred in summer of 1933 at former site 13 mi (21 km) upstream. Flood of June 7, 1960, reached a stage of 12.0 ft (3.66 m), present site and datum, from information by local residents and State Department of Highways and Public Transportation

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,600 ft$^3$/s (442 m$^3$/s) June 11 at 1000 hours, gage height, 6.66 ft (2.030 m), no other peak above base of 6,000 ft$^3$/s (170 m$^3$/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .05 | .07 | .29 | 1.5 | 1.4 | .55 | .69 | 25 | .03 | 1.1 | .00 | .00 |
| 2 | .01 | .06 | .29 | 1.2 | 1.2 | .67 | .97 | 25 | .03 | .87 | .00 | 45 |
| 3 | .01 | .05 | .29 | 1.5 | 1.2 | .67 | 1.0 | 23 | .03 | .70 | .00 | .10 |
| 4 | .02 | .04 | .34 | 1.4 | 1.2 | .67 | 1.5 | 25 | .03 | .46 | .00 | .00 |
| 5 | .06 | .03 | .34 | 1.5 | 1.2 | .80 | 1.8 | 25 | .03 | .57 | .00 | .00 |
| 6 | .07 | .03 | .34 | 1.3 | 2.0 | .80 | 1.1 | 20 | 11 | .36 | .00 | .00 |
| 7 | .10 | .02 | .55 | 1.3 | 3.0 | .55 | 1.2 | 17 | .03 | .27 | .00 | .00 |
| 8 | .02 | .02 | .55 | 1.3 | 2.1 | .55 | 1.1 | 17 | .03 | .27 | .00 | .00 |
| 9 | .00 | .02 | .44 | 1.1 | 1.7 | .67 | 1.6 | 17 | .03 | .15 | .00 | .00 |
| 10 | .04 | .02 | .55 | 1.2 | 1.4 | .67 | 2.0 | 17 | .03 | .20 | .00 | .00 |
| 11 | .09 | 1.0 | .55 | 1.2 | 1.0 | .94 | 1.9 | 16 | 4010 | .11 | .00 | .00 |
| 12 | .11 | .43 | .55 | 1.2 | .79 | .55 | 2.1 | 16 | 1120 | .11 | .00 | .00 |
| 13 | .10 | .30 | .55 | 1.0 | .94 | .55 | 2.0 | 16 | 332 | .05 | .00 | 27 |
| 14 | .23 | .25 | .67 | 1.1 | .94 | .67 | 2.2 | 16 | 106 | .05 | .00 | 119 |
| 15 | .91 | .16 | .55 | 1.5 | .67 | .55 | 2.6 | 1170 | 54 | .02 | 2.4 | 38 |
| 16 | 3.0 | .12 | .44 | 1.6 | .67 | .44 | 2.7 | 468 | 36 | .02 | .78 | 10 |
| 17 | 8.4 | .15 | .55 | 1.9 | .55 | .44 | 2.9 | 207 | 24 | .00 | .36 | 2.0 |
| 18 | 18 | .11 | .55 | 2.7 | .55 | .55 | 3.5 | 120 | 18 | .00 | .00 | .00 |
| 19 | 14 | .15 | .55 | 2.4 | .41 | .34 | 3.6 | 57 | 16 | .00 | .00 | 8.8 |
| 20 | 2.5 | .13 | .55 | 1.5 | .55 | .24 | 3.4 | 20 | 15 | .00 | .48 | 5.1 |
| 21 | .86 | .06 | .44 | 1.3 | .80 | .44 | 4.0 | 6.9 | 188 | .00 | .00 | 3.2 |
| 22 | .24 | .07 | .55 | 1.7 | .80 | .44 | 4.4 | 3.9 | 44 | .00 | .00 | 2.4 |
| 23 | .52 | .17 | .55 | 1.4 | .80 | .44 | 6.2 | 2.8 | 15 | .00 | .00 | 2.4 |
| 24 | .97 | .14 | .67 | 1.2 | .80 | .44 | 23 | 2.4 | 9.4 | .00 | .00 | 2.5 |
| 25 | 1.8 | .13 | .94 | 1.2 | .80 | .55 | 16 | 2.0 | 4.8 | .00 | .00 | .00 |
| 26 | 3.5 | .17 | 1.2 | 1.4 | .67 | .44 | 16 | 1.7 | 3.7 | .00 | .00 | 47 |
| 27 | 4.3 | .14 | 1.2 | 1.5 | .67 | 2.0 | 25 | 1.4 | 2.4 | .00 | .00 | 64 |
| 28 | 6.1 | .14 | 1.2 | 1.4 | .67 | 1.3 | 26 | 17 | 1.5 | .00 | .00 | 54 |
| 29 | 16 | .16 | 1.2 | 1.2 | .67 | 4.3 | 25 | 309 | 1.3 | .00 | .00 | 40 |
| 30 | 489 | .20 | 1.2 | 1.2 | --- | 1.3 | 25 | 12 | 1.3 | .00 | .00 | 26 |
| 31 | 19 | --- | 1.2 | 1.2 | --- | 1.8 | --- | .24 | --- | .00 | .00 | --- |
| TOTAL | 590.01 | 4.54 | 19.84 | 44.1 | 30.15 | 25.32 | 210.46 | 2676.34 | 6013.67 | 5.31 | 4.02 | 496.50 |
| MEAN | 19.0 | .15 | .64 | 1.42 | 1.04 | .82 | 7.02 | 86.3 | 200 | .17 | .13 | 16.6 |
| MAX | 489 | 1.0 | 1.2 | 2.7 | 3.0 | 4.3 | 26 | 1170 | 4010 | 1.1 | 2.4 | 119 |
| MIN | .00 | .02 | .29 | 1.0 | .41 | .24 | .69 | .24 | .03 | .00 | .00 | .00 |
| CFSM | .009 | .000 | .000 | .001 | .001 | .000 | .003 | .04 | .10 | .000 | .000 | .008 |
| IN. | .01 | .00 | .00 | .00 | .00 | .01 | .00 | .05 | .11 | .00 | .00 | .01 |
| AC-FT | 1170 | 9.0 | 39 | 87 | 60 | 50 | 417 | 5310 | 11930 | 11 | 8.0 | 985 |

CAL YR 1979 TOTAL 27057.77 MEAN 74.1 MAX 4160 MIN .00 CFSM .04 IN .50 AC-FT 53670
WTR YR 1980 TOTAL 10120.26 MEAN 27.7 MAX 4010 MIN .00 CFSM .01 IN .19 AC-FT 20070

## 07299200 PRAIRIE DOG TOWN FORK RED RIVER NEAR LAKEVIEW, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1968 to September 1979.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1968 to September 1980 (discontinued).
WATER TEMPERATURES: July 1968 to September 1980 (discontinued).
SUSPENDED SEDIMENT DISCHARGE: October 1978 to September 1980 (discontinued).

INSTRUMENTATION.--Continuous recording of specific conductance was discontinued on September 1979.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (1968-79): Maximum daily, 37,900 micromhos July 30,1979; minimum daily, 1,320 micromhos Apr. 19, 1979.
WATER TEMPERATURES (1968-79): Minimum daily, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATION: Maximum daily mean, 40,100 mg/L Aug. 15, 1980; minimum daily mean, 9 mg/L Jan 29, 1980.
SEDIMENT LOADS: Maximum daily, 325,000 tons June 11, 1980; minimum daily, 0 tons on many days.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 40,100 mg/L Aug. 15; minimum daily mean, 9 mg/L Jan. 29.
SEDIMENT LOADS: Maximum daily, 325,000 tons June 11; minimum daily, 0 tons on many days during year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | TEMPER-ATURE, WATER (DEG C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. FALL DIAM. % FINER THAN .002 MM | SED. SUSP. FALL DIAM. % FINER THAN .004 MM |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 06... | 1000 | 1.1 | 4.0 | 75 | .22 | -- | -- |
| APR | | | | | | | |
| 23... | 1540 | 731 | 28.0 | 23800 | 47000 | 17 | 71 |
| 24... | 1640 | 189 | 22.5 | 6170 | 3150 | 15 | 17 |
| MAY | | | | | | | |
| 16... | 1640 | 346 | 22.0 | 17200 | 16100 | 12 | 15 |
| JUL | | | | | | | |
| 08... | 2018 | 12 | 27.0 | 4530 | 147 | 46 | 60 |
| 09... | 1114 | 13 | 25.0 | 6470 | 227 | 34 | 47 |

| DATE | SED. SUSP. FALL DIAM. % FINER THAN .008 MM | SED. SUSP. FALL DIAM. % FINER THAN .016 MM | SED. SUSP. FALL DIAM. % FINER THAN .031 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 06... | -- | -- | -- | 52 | -- | -- | -- |
| APR | | | | | | | |
| 23... | 92 | 95 | 96 | 96 | 97 | 99 | 100 |
| 24... | 94 | 98 | 99 | 99 | 100 | -- | -- |
| MAY | | | | | | | |
| 16... | 78 | 83 | 87 | 92 | 98 | 99 | 100 |
| JUL | | | | | | | |
| 08... | 67 | 79 | 89 | 95 | 99 | 100 | -- |
| 09... | 72 | 82 | 91 | 95 | 99 | 100 | -- |

## 07299200 PRAIRIE DOG TOWN FORK RED RIVER NEAR LAKEVIEW, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7520 | --- | 6610 | 6680 | 7000 | | | --- | --- | 8130 | --- | --- |
| 2 | 7590 | 8130 | 6580 | 6970 | 5510 | | | --- | --- | 8600 | --- | 6280 |
| 3 | 7520 | 7340 | 6830 | 6750 | 7260 | | | --- | --- | 8510 | --- | 15400 |
| 4 | 7140 | 6890 | 6750 | 6660 | 7090 | | | --- | --- | 9490 | --- | --- |
| 5 | 7380 | 6940 | 6910 | 7020 | 6830 | | | --- | --- | 9540 | --- | --- |
| 6 | 7390 | 6550 | 6430 | 6950 | 6840 | | | --- | --- | 9600 | --- | --- |
| 7 | 7650 | 6780 | 6550 | 6330 | 6850 | | | --- | --- | 9450 | --- | --- |
| 8 | 7690 | 6810 | 7040 | 7090 | 7120 | | | --- | --- | 9810 | --- | --- |
| 9 | 7780 | 7290 | 6660 | 6510 | 8940 | | | --- | --- | 9650 | --- | --- |
| 10 | 7850 | 6550 | 7030 | 7280 | 7080 | | | --- | --- | --- | --- | --- |
| 11 | 7260 | 6610 | 7080 | 6590 | 7210 | | | --- | --- | 10100 | --- | --- |
| 12 | 7530 | 7580 | 6410 | 7440 | 7930 | | | --- | --- | 9810 | --- | --- |
| 13 | 7580 | 6570 | 6430 | 7310 | 6900 | | | --- | --- | --- | --- | --- |
| 14 | 7500 | 6510 | 8110 | 6760 | 7580 | | | --- | --- | 10200 | --- | 5720 |
| 15 | 7960 | 6640 | 6900 | 6790 | 7680 | | | --- | --- | --- | 13500 | 6170 |
| 16 | 7930 | 6210 | 7260 | 6450 | 5870 | | | --- | --- | --- | 13400 | 5420 |
| 17 | 7930 | 6610 | 7360 | 6800 | 8740 | | | --- | 12200 | --- | --- | --- |
| 18 | 7470 | 6550 | 6650 | 7090 | 9190 | | | --- | --- | --- | --- | --- |
| 19 | 7530 | 6360 | 7160 | 7210 | 7710 | | | --- | --- | --- | --- | --- |
| 20 | 7850 | 6590 | 6990 | 7100 | 7740 | | | --- | --- | --- | --- | --- |
| 21 | 7830 | 6470 | 7000 | 7680 | 7050 | | | 22400 | --- | --- | --- | --- |
| 22 | 8590 | 6260 | 6850 | 7370 | 6800 | | | --- | --- | --- | --- | --- |
| 23 | 7730 | 5560 | 6660 | 6930 | 6780 | | | --- | --- | --- | --- | --- |
| 24 | 7780 | 6570 | 6660 | 6950 | 6450 | | | --- | --- | --- | --- | --- |
| 25 | 7150 | 6470 | 6810 | 7240 | 6510 | | | --- | --- | --- | --- | --- |
| 26 | 7450 | 6440 | 6730 | 6850 | 6570 | | | --- | --- | --- | --- | 7100 |
| 27 | 7240 | 6250 | 6620 | 6250 | 6400 | | | --- | --- | --- | --- | 9230 |
| 28 | 7170 | 6210 | 6150 | 5020 | 6800 | | | --- | --- | --- | --- | 9130 |
| 29 | 7350 | 6350 | 6680 | 5030 | 6670 | | | --- | --- | --- | --- | 8340 |
| 30 | 8800 | 7640 | 6660 | 7520 | --- | | | --- | --- | --- | --- | 7340 |
| 31 | 6670 | --- | 6680 | 7170 | --- | | | --- | --- | --- | --- | --- |
| MEAN | 7610 | 6680 | 6810 | 6830 | 7140 | | | 22400 | 12200 | 9410 | 13500 | 8010 |

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25.0 | 7.0 | 8.5 | 2.0 | 1.5 | | | --- | --- | 32.0 | | |
| 2 | 12.5 | 6.5 | 1.0 | 5.0 | 4.0 | | | --- | --- | 33.0 | | |
| 3 | 15.0 | 8.5 | 4.0 | 4.5 | 5.0 | | | --- | --- | 33.0 | | |
| 4 | 15.0 | 9.0 | 5.0 | 4.5 | 4.5 | | | --- | --- | 25.0 | | |
| 5 | 12.0 | 10.5 | 6.0 | 5.5 | 4.5 | | | --- | --- | 23.0 | | |
| 6 | 23.0 | 7.5 | 4.0 | 6.5 | 4.0 | | | --- | --- | 31.0 | | |
| 7 | 14.0 | 9.5 | 4.5 | 2.0 | 6.0 | | | --- | --- | 21.0 | | |
| 8 | 14.0 | 10.0 | 5.5 | 5.5 | 1.0 | | | --- | --- | 27.0 | | |
| 9 | 12.0 | 10.5 | 7.0 | 4.0 | 8.5 | | | --- | --- | 25.0 | | |
| 10 | 11.5 | 5.0 | 5.0 | 3.0 | 6.0 | | | --- | --- | 26.0 | | |
| 11 | 15.0 | 6.5 | 8.0 | 4.5 | 8.5 | | | --- | --- | 33.0 | | |
| 12 | 15.0 | 5.0 | 2.0 | 12.5 | 10.5 | | | --- | --- | 35.0 | | |
| 13 | 14.5 | 4.5 | 3.0 | 11.0 | 11.5 | | | --- | --- | --- | | |
| 14 | 15.0 | 5.0 | 3.0 | 6.0 | 15.0 | | | --- | --- | 32.0 | | |
| 15 | 17.0 | 5.0 | 3.5 | 9.5 | 9.5 | | | --- | --- | --- | | |
| 16 | 15.0 | 5.0 | 1.5 | 7.0 | 4.0 | | | --- | --- | --- | | |
| 17 | 20.0 | 6.5 | .0 | 4.5 | 5.5 | | | --- | 35.0 | --- | | |
| 18 | 20.0 | 10.0 | 2.5 | 8.0 | 9.5 | | | --- | --- | --- | | |
| 19 | 17.0 | 8.5 | 2.0 | 10.5 | 12.0 | | | --- | --- | --- | | |
| 20 | 14.0 | 14.5 | 2.5 | 4.5 | 15.0 | | | --- | --- | --- | | |
| 21 | 16.0 | 8.0 | 6.0 | 5.0 | 8.0 | | | 27.0 | --- | --- | | |
| 22 | 10.5 | 3.0 | 9.0 | 4.0 | 15.0 | | | --- | --- | --- | | |
| 23 | 10.0 | 11.0 | 7.0 | 2.0 | 19.5 | | | --- | --- | --- | | |
| 24 | 9.0 | 16.0 | 5.0 | 3.5 | 9.5 | | | --- | --- | --- | | |
| 25 | 10.0 | 16.5 | 4.5 | 5.5 | 8.0 | | | --- | --- | --- | | |
| 26 | 11.5 | 4.5 | 4.5 | 5.0 | 6.5 | | | --- | --- | --- | | |
| 27 | 15.0 | 5.5 | 7.0 | 4.5 | 5.5 | | | --- | --- | --- | | |
| 28 | 10.0 | 4.5 | 9.5 | 3.0 | 10.0 | | | --- | --- | --- | | |
| 29 | 10.0 | 2.0 | 5.0 | 5.0 | 8.5 | | | --- | --- | --- | | |
| 30 | 11.0 | 1.5 | 2.5 | 2.5 | --- | | | --- | --- | --- | | |
| 31 | 5.0 | --- | 2.0 | 4.5 | --- | | | --- | --- | --- | | |
| MEAN | 14.0 | 7.5 | 4.5 | 5.5 | 8.0 | | | 27.0 | 35.0 | 29.0 | | |

## 07299200 PRAIRIE DOG TOWN FORK RED RIVER NEAR LAKEVIEW, TX--Continued

### SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | |
| 1 | .05 | 290 | .04 | .07 | 6500 | 1.2 | .29 | 137 | .11 |
| 2 | .01 | 500 | .01 | .06 | 190 | .03 | .29 | 227 | .18 |
| 3 | .01 | 1260 | .03 | .05 | 218 | .03 | .29 | 77 | .06 |
| 4 | .02 | 1230 | .07 | .04 | 162 | .02 | .34 | 82 | .08 |
| 5 | .06 | 870 | .14 | .03 | 168 | .01 | .34 | 102 | .09 |
| 6 | .07 | 340 | .06 | .03 | 169 | .01 | .34 | 81 | .07 |
| 7 | .10 | 570 | .15 | .02 | 143 | .00 | .55 | 90 | .13 |
| 8 | .02 | 960 | .05 | .02 | 150 | .00 | .55 | 81 | .12 |
| 9 | .00 | --- | .00 | .02 | 186 | .01 | .44 | 82 | .10 |
| 10 | .04 | 130 | .01 | .02 | 95 | .00 | .55 | 81 | .12 |
| 11 | .09 | 116 | .03 | 1.0 | 141 | .38 | .55 | 78 | .12 |
| 12 | .11 | 126 | .04 | .43 | 115 | .13 | .55 | 76 | .11 |
| 13 | .10 | 122 | .03 | .30 | 108 | .09 | .55 | 75 | .11 |
| 14 | .23 | 122 | .08 | .25 | 110 | .07 | .67 | 106 | .19 |
| 15 | .91 | 180 | .44 | .16 | 84 | .04 | .55 | 69 | .10 |
| 16 | 3.0 | 360 | 2.9 | .12 | 68 | .02 | .44 | 123 | .15 |
| 17 | 8.4 | 290 | 6.6 | .15 | 99 | .04 | .55 | 80 | .12 |
| 18 | 18 | 990 | 48 | .11 | 110 | .03 | .55 | 56 | .08 |
| 19 | 14 | 1100 | 42 | .15 | 100 | .04 | .55 | 109 | .16 |
| 20 | 2.5 | 300 | 2.0 | .13 | 69 | .02 | .55 | 68 | .10 |
| 21 | .86 | 170 | .39 | .06 | 61 | .00 | .44 | 68 | .08 |
| 22 | .24 | 54 | .03 | .07 | 37 | .00 | .55 | 49 | .07 |
| 23 | .52 | 111 | .16 | .17 | 11 | .00 | .55 | 69 | .10 |
| 24 | .97 | 108 | .28 | .14 | 48 | .02 | .67 | 62 | .11 |
| 25 | 1.8 | 119 | .58 | .13 | 82 | .03 | .94 | 110 | .28 |
| 26 | 3.5 | 121 | 1.1 | .17 | 35 | .02 | 1.2 | 64 | .21 |
| 27 | 4.3 | 177 | 2.1 | .14 | 52 | .02 | 1.2 | 32 | .10 |
| 28 | 6.1 | 73 | 1.2 | .14 | 40 | .02 | 1.2 | 10 | .03 |
| 29 | 16 | 170 | 7.3 | .16 | 32 | .01 | 1.2 | 48 | .16 |
| 30 | 489 | 21300 | 62900 | .20 | 29 | .02 | 1.2 | 25 | .08 |
| 31 | 19 | 14500 | 744 | --- | --- | --- | 1.2 | 15 | .05 |
| TOTAL | 590.01 | --- | 63759.82 | 4.54 | --- | 2.31 | 19.84 | --- | 3.57 |

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---|---|---|---|---|---|---|---|---|---|
| | | JANUARY | | | FEBRUARY | | | MARCH | |
| 1 | 1.5 | 62 | .25 | 1.4 | 165 | .62 | .55 | 95 | .14 |
| 2 | 1.2 | 79 | .26 | 1.2 | 183 | .59 | .67 | 95 | .17 |
| 3 | 1.5 | 59 | .24 | 1.2 | 167 | .54 | .67 | 95 | .17 |
| 4 | 1.4 | 48 | .18 | 1.2 | 160 | .52 | .67 | 95 | .17 |
| 5 | 1.5 | 79 | .32 | 1.2 | 138 | .45 | .80 | 95 | .21 |
| 6 | 1.3 | 43 | .15 | 2.0 | 120 | .65 | .80 | 10 | .24 |
| 7 | 1.3 | 89 | .31 | 3.0 | 140 | 1.1 | .55 | 95 | .14 |
| 8 | 1.3 | 75 | .26 | 2.1 | 141 | .80 | .55 | 90 | .13 |
| 9 | 1.1 | --- | .14 | 1.7 | 201 | .92 | .67 | 110 | .20 |
| 10 | 1.2 | 24 | .08 | 1.4 | 121 | .46 | .67 | 95 | .17 |
| 11 | 1.2 | 60 | .19 | 1.0 | 160 | .43 | .94 | 80 | .20 |
| 12 | 1.2 | 50 | .16 | .79 | 113 | .24 | .55 | 105 | .16 |
| 13 | 1.0 | 67 | .18 | .94 | 115 | .29 | .55 | 85 | .13 |
| 14 | 1.1 | 61 | .18 | .94 | 67 | .17 | .67 | 100 | .18 |
| 15 | 1.5 | 44 | .18 | .67 | 123 | .22 | .55 | 70 | .10 |
| 16 | 1.6 | 38 | .16 | .67 | 285 | .52 | .44 | 60 | .07 |
| 17 | 1.9 | 30 | .15 | .55 | 162 | .24 | .44 | 80 | .10 |
| 18 | 2.7 | 41 | .30 | .55 | 196 | .29 | .55 | 70 | .10 |
| 19 | 2.4 | 99 | .64 | .41 | 196 | .22 | .34 | 70 | .06 |
| 20 | 1.5 | 39 | .16 | .55 | 147 | .22 | .24 | 60 | .04 |
| 21 | 1.3 | 30 | .11 | .80 | 189 | .41 | .44 | 80 | .10 |
| 22 | 1.7 | 23 | .11 | .80 | 151 | .33 | .44 | 90 | .11 |
| 23 | 1.4 | 33 | .12 | .80 | 132 | .29 | .44 | 80 | .10 |
| 24 | 1.2 | 42 | .14 | .80 | 100 | .22 | .44 | 85 | .10 |
| 25 | 1.2 | 35 | .11 | .80 | 99 | .21 | .55 | 80 | .12 |
| 26 | 1.4 | 29 | .11 | .67 | 89 | .16 | .44 | 70 | .08 |
| 27 | 1.5 | 12 | .05 | .67 | 86 | .16 | 2.0 | 120 | .65 |
| 28 | 1.4 | 12 | .05 | .67 | 84 | .15 | 1.3 | 100 | .35 |
| 29 | 1.2 | 9 | .03 | .67 | 103 | .19 | 4.3 | 130 | 1.5 |
| 30 | 1.2 | 21 | .07 | --- | --- | --- | 1.3 | 80 | .28 |
| 31 | 1.2 | 16 | .05 | --- | --- | --- | 1.8 | 95 | .46 |
| TOTAL | 44.1 | --- | 5.44 | 30.15 | --- | 11.61 | 25.32 | --- | 6.73 |

## 07299200 PRAIRIE DOG TOWN FORK RED RIVER NEAR LAKEVIEW, TX--Continued

### SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCEN-TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN-TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN-TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---|---|---|---|---|---|---|---|---|---|
| | | APRIL | | | MAY | | | JUNE | |
| 1 | .69 | 80 | .15 | 25 | 70 | 4.7 | .03 | 70 | .0 |
| 2 | .97 | 90 | .24 | 25 | 80 | 5.4 | .03 | 72 | .0 |
| 3 | 1.0 | 80 | .22 | 23 | 80 | 5.0 | .03 | 60 | .0 |
| 4 | 1.5 | 65 | .26 | 25 | 60 | 4.1 | .03 | 60 | .0 |
| 5 | 1.8 | 60 | .29 | 25 | 70 | 4.7 | .03 | 60 | .0 |
| 6 | 1.1 | 70 | .21 | 20 | 70 | 3.8 | 11 | 5310 | 418 |
| 7 | 1.2 | 70 | .23 | 17 | 65 | 3.0 | .03 | 110 | .0 |
| 8 | 1.1 | 65 | .19 | 17 | 60 | 2.8 | .03 | 30 | .0 |
| 9 | 1.6 | 75 | .32 | 17 | 70 | 3.2 | .03 | 35 | .0 |
| 10 | 2.0 | 70 | .38 | 17 | 75 | 3.4 | .03 | 60 | .0 |
| 11 | 1.9 | 70 | .36 | 16 | 65 | 2.8 | 4010 | 19700 | 325000 |
| 12 | 2.1 | 70 | .40 | 16 | 70 | 3.0 | 1120 | 12000 | 36300 |
| 13 | 2.0 | 50 | .27 | 16 | 60 | 2.6 | 332 | 6200 | 5560 |
| 14 | 2.2 | 60 | .36 | 16 | 55 | 2.4 | 106 | 1700 | 487 |
| 15 | 2.6 | 50 | .35 | 1170 | 10800 | 55600 | 54 | 1000 | 146 |
| 16 | 2.7 | 50 | .36 | 468 | 10000 | 14200 | 36 | 1500 | 177 |
| 17 | 2.9 | 70 | .55 | 207 | 5000 | 2790 | 24 | 1000 | 65 |
| 18 | 3.5 | 85 | .80 | 120 | 2500 | 810 | 18 | 1000 | 49 |
| 19 | 3.6 | 75 | .73 | 57 | 1000 | 154 | 16 | 500 | 22 |
| 20 | 3.4 | 80 | .73 | 20 | 500 | 27 | 15 | 500 | 20 |
| 21 | 4.0 | 85 | .92 | 6.9 | 520 | 9.7 | 188 | 5450 | 4360 |
| 22 | 4.4 | 85 | 1.0 | 3.9 | 500 | 5.3 | 44 | 3500 | 416 |
| 23 | 6.2 | 85 | 1.4 | 2.8 | 465 | 3.5 | 15 | 310 | 13 |
| 24 | 23 | 105 | 8.2 | 2.4 | 410 | 2.7 | 9.4 | 60 | 1.5 |
| 25 | 16 | 40 | 1.7 | 2.0 | 350 | 1.9 | 4.8 | 30 | .4 |
| 26 | 16 | 50 | 2.2 | 1.7 | 285 | 1.3 | 3.7 | 40 | .4 |
| 27 | 25 | 60 | 4.1 | 1.4 | 240 | .91 | 2.4 | 50 | .3 |
| 28 | 26 | 70 | 4.9 | 17 | 170 | 7.8 | 1.5 | 60 | .2 |
| 29 | 25 | 80 | 5.4 | 309 | 10100 | 9980 | 1.3 | 60 | .2 |
| 30 | 25 | 70 | 4.7 | 12 | 1500 | 49 | 1.3 | 60 | .2 |
| 31 | --- | --- | --- | .24 | 140 | .09 | --- | --- | --- |
| TOTAL | 210.46 | --- | 41.92 | 2676.34 | --- | 83694.10 | 6013.67 | --- | 373036.2 |

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCEN-TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN-TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN-TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---|---|---|---|---|---|---|---|---|---|
| | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 1.1 | 1200 | 3.6 | .00 | --- | --- | .00 | --- | --- |
| 2 | .87 | 1100 | 2.6 | .00 | --- | --- | 45 | 8280 | 1950 |
| 3 | .70 | 600 | 1.1 | .00 | --- | --- | .10 | 3600 | .97 |
| 4 | .46 | 450 | .56 | .00 | --- | --- | .00 | --- | --- |
| 5 | .57 | 570 | .88 | .00 | --- | --- | .00 | --- | --- |
| 6 | .36 | 400 | .39 | .00 | --- | --- | .00 | --- | --- |
| 7 | .27 | 400 | .29 | .00 | --- | --- | .00 | --- | --- |
| 8 | .27 | 800 | .58 | .00 | --- | --- | .00 | --- | --- |
| 9 | .15 | 1000 | .41 | .00 | --- | --- | .00 | --- | --- |
| 10 | .20 | 600 | .32 | .00 | --- | --- | .00 | --- | --- |
| 11 | .11 | 1000 | .30 | .00 | --- | --- | .00 | --- | --- |
| 12 | .11 | 850 | .25 | .00 | --- | --- | .00 | --- | --- |
| 13 | .05 | 420 | .06 | .00 | --- | --- | 27 | 1700 | 484 |
| 14 | .05 | 480 | .06 | .00 | --- | --- | 119 | 6340 | 3150 |
| 15 | .02 | 250 | .01 | 2.4 | 40100 | 364 | 38 | 7300 | 749 |
| 16 | .02 | 200 | .01 | .78 | 35700 | 213 | 10 | 3200 | 86 |
| 17 | .00 | --- | .00 | .36 | 900 | .87 | 2.0 | 100 | .54 |
| 18 | .00 | --- | --- | .00 | --- | --- | .00 | 90 | .00 |
| 19 | .00 | --- | --- | .00 | --- | --- | 8.8 | 110 | 2.6 |
| 20 | .00 | --- | --- | .48 | 7040 | 46 | 5.1 | 100 | 1.4 |
| 21 | .00 | --- | --- | .00 | --- | --- | 3.2 | 100 | .86 |
| 22 | .00 | --- | --- | .00 | --- | --- | 2.4 | 100 | .65 |
| 23 | .00 | --- | --- | .00 | --- | --- | 2.4 | 110 | .71 |
| 24 | .00 | --- | --- | .00 | --- | --- | 2.5 | 100 | .68 |
| 25 | .00 | --- | --- | .00 | --- | --- | .00 | --- | .00 |
| 26 | .00 | --- | --- | .00 | --- | --- | 47 | 300 | 38 |
| 27 | .00 | --- | --- | .00 | --- | --- | 64 | 265 | 46 |
| 28 | .00 | --- | --- | .00 | --- | --- | 54 | 200 | 29 |
| 29 | .00 | --- | --- | .00 | --- | --- | 40 | 255 | 28 |
| 30 | .00 | --- | --- | .00 | --- | --- | 26 | 140 | 9.8 |
| 31 | .00 | --- | --- | .00 | --- | --- | --- | --- | --- |
| TOTAL | 5.31 | --- | 11.42 | 4.02 | --- | 623.87 | 496.50 | --- | 6578.21 |
| YEAR | 10120.26 | | 527775.20 | | | | | | |

## 07299300 LITTLE RED RIVER NEAR TURKEY, TX

LOCATION.--Lat 34°32'27", long 100°46'13", Hall County, Hydrologic Unit 11120105, on left bank at downstream side of bridge on Farm Road 657, 10 mi (16 km) upstream from mouth, and 14.5 mi (23.3 km) northeast of Turkey.

DRAINAGE AREA.--139 mi² (360 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,925.39 ft (586.859 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. No diversion above station.

AVERAGE DISCHARGE.--12 years (water years 1969-80), 11.0 ft³/s (0.312 m³/s), 1.07 in/yr (27 mm/yr), 7,970 acre-ft/yr (9.83 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,880 ft³/s (110 m³/s) Mar. 18, 1979, gage height, 12.57 ft (3.831 m); maximum gage height, 13.48 ft (4.109 m) Aug. 29, 1968, from floodmarks, from rating curve extended above 620 ft³/s (17.6 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,180 ft³/s (33.4 m³/s) May 15 at 1345 hours, gage height, 8.91 ft (2.716 m), no peak above base of 1,500 ft³/s (42.5 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .10 | .16 | .15 | .10 | .10 | .13 | .15 | .07 | 2.6 | .00 | .00 | .00 |
| 2 | .10 | .15 | .15 | .10 | .10 | .15 | .19 | .02 | 1.6 | .00 | .00 | .00 |
| 3 | .10 | .10 | .15 | .10 | .10 | .15 | .15 | .01 | .80 | .00 | .00 | .00 |
| 4 | .06 | .12 | .13 | .10 | .06 | .08 | .15 | .01 | .34 | .00 | .00 | .00 |
| 5 | .06 | .09 | .11 | .10 | .06 | .18 | .19 | .01 | .19 | .00 | .00 | .00 |
| 6 | .04 | .11 | .11 | .10 | .06 | .17 | .15 | .05 | .15 | .00 | .00 | .00 |
| 7 | .05 | .11 | .12 | .10 | .23 | .11 | .15 | .01 | .06 | .00 | .00 | .00 |
| 8 | .04 | .14 | .11 | .10 | .57 | .12 | .15 | .06 | .04 | .00 | .00 | .00 |
| 9 | .03 | .13 | .14 | .10 | .28 | .08 | .15 | .01 | .06 | .00 | .00 | .00 |
| 10 | .04 | .13 | .13 | .15 | .24 | .14 | .15 | .01 | .15 | .00 | .00 | .00 |
| 11 | .04 | .13 | .12 | .10 | .27 | .22 | .19 | .01 | 37 | .00 | .00 | .00 |
| 12 | .04 | .11 | .13 | .10 | .23 | .09 | .19 | .00 | 5.8 | .00 | .00 | .00 |
| 13 | .04 | .10 | .17 | .10 | .17 | .08 | .19 | .01 | .34 | .00 | .00 | 90 |
| 14 | .03 | .07 | .23 | .10 | .25 | .12 | .15 | .07 | .04 | .00 | .00 | 15 |
| 15 | .04 | .09 | .14 | .10 | .18 | .13 | .19 | 353 | .01 | .00 | 29 | 1.1 |
| 16 | .02 | .08 | .15 | .10 | .29 | .11 | .15 | 37 | .51 | .00 | .94 | .80 |
| 17 | .01 | .06 | .19 | .06 | .99 | .09 | .10 | 2.6 | .23 | .00 | .00 | .64 |
| 18 | .01 | .06 | .13 | .06 | 3.2 | .07 | .15 | .51 | .01 | .00 | .00 | .64 |
| 19 | .01 | .09 | .11 | .23 | 2.9 | .11 | .15 | .19 | .01 | .00 | .01 | .51 |
| 20 | .01 | 11 | .12 | .19 | .37 | .13 | .19 | .28 | .00 | .00 | .19 | .28 |
| 21 | .01 | 1.4 | .13 | .10 | .24 | .08 | .15 | .23 | .02 | .00 | .00 | .28 |
| 22 | .02 | .19 | .10 | .06 | .20 | .16 | .10 | .23 | .00 | .00 | .00 | .23 |
| 23 | .02 | .13 | .19 | .04 | .30 | .13 | .06 | .15 | .00 | .00 | .00 | .34 |
| 24 | .02 | .13 | .17 | .04 | .23 | .07 | 18 | .10 | .00 | .00 | .00 | .51 |
| 25 | .02 | .10 | .20 | .06 | .21 | .07 | 22 | .10 | .00 | .00 | .00 | .40 |
| 26 | .02 | .11 | .19 | .06 | .20 | .13 | .66 | .15 | .00 | .00 | .00 | 1.9 |
| 27 | .02 | .08 | .22 | .06 | .15 | 11 | .06 | .10 | .00 | .00 | .00 | 41 |
| 28 | .02 | .10 | .15 | .06 | .18 | 3.9 | .03 | 13 | .00 | .00 | .00 | 20 |
| 29 | .03 | .10 | .10 | .06 | .15 | 2.2 | .03 | 45 | .00 | .00 | .00 | 2.1 |
| 30 | 59 | .15 | .10 | .10 | --- | .33 | .09 | 6.0 | .00 | .00 | .00 | .51 |
| 31 | 4.2 | --- | .10 | .10 | --- | .16 | --- | 3.8 | --- | .00 | .00 | --- |
| TOTAL | 64.25 | 15.52 | 4.44 | 2.93 | 12.51 | 20.69 | 44.41 | 462.79 | 49.96 | .00 | 30.14 | 176.24 |
| MEAN | 2.07 | .52 | .14 | .095 | .43 | .67 | 1.48 | 14.9 | 1.67 | .000 | .97 | 5.87 |
| MAX | 59 | 11 | .23 | .23 | 3.2 | 11 | 22 | 353 | 37 | .00 | 29 | 90 |
| MIN | .01 | .06 | .10 | .04 | .06 | .07 | .03 | .00 | .00 | .00 | .00 | .00 |
| CFSM | .02 | .004 | .001 | .001 | .003 | .005 | .01 | .11 | .01 | .000 | .007 | .04 |
| IN. | .02 | .00 | .00 | .00 | .00 | .01 | .01 | .12 | .01 | .00 | .01 | .05 |
| AC-FT | 127 | 31 | 8.8 | 5.8 | 25 | 41 | 88 | 918 | 99 | .00 | 60 | 350 |

CAL YR 1979 TOTAL 6192.41 MEAN 17.0 MAX 1110 MIN .01 CFSM .12 IN 1.66 AC-FT 12280
WTR YR 1980 TOTAL 883.88 MEAN 2.41 MAX 353 MIN .00 CFSM .02 IN .24 AC-FT 1750

## 07299300 LITTLE RED RIVER NEAR TURKEY, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1968 to current year.
WATER TEMPERATURES: July 1968 to current year.
SUSPENDED SEDIMENT DISCHARGE: February 1979 to current year.

INSTRUMENTATION.--Continuous recording of specific conductance was discontinued on September 1979.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (1968-79): Maximum daily, 126,000 micromhos Feb. 21, 1978; minimum daily, 4,100 micromhos Sept. 3, 1979.
WATER TEMPERATURES (1968-76, 1979): Maximum daily, 36.0°C July 23, 1969; minimum daily, 0.0°C on several days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 34,000 mg/L June 24, 1979; minimum daily mean, 5 mg/L Feb. 14, Apr. 7, 1979, Jan. 28, 1980.
SEDIMENT LOADS: Maximum daily, 56,500 tons Mar. 18, 1979; minimum daily, 0.0 tons on many days.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Minimum daily, 0.0°C Jan. 29.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 16,100 mg/L May 15; minimum daily mean, 5 mg/L Jan. 28.
SEDIMENT LOADS: Maximum daily, 26,700 tons May 15; minimum daily, 0.00 tons on many days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | TEMPER-ATURE, WATER (DEG C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. FALL DIAM. % FINER THAN .002 MM | SED. SUSP. FALL DIAM. % FINER THAN .004 MM |
|---|---|---|---|---|---|---|---|
| DEC | | | | | | | |
| 28... | 1130 | .13 | 7.0 | 17 | .01 | -- | -- |
| FEB | | | | | | | |
| 05... | 1650 | .07 | 14.0 | 58 | .01 | -- | -- |
| MAR | | | | | | | |
| 17... | 1300 | .08 | -- | 33 | .01 | -- | -- |
| APR | | | | | | | |
| 23... | 1425 | .06 | 28.0 | 27 | .00 | -- | -- |
| 24... | 1525 | 21 | 24.0 | 2620 | 149 | 64 | 68 |
| MAY | | | | | | | |
| 15... | 1430 | 969 | 21.0 | 3470 | 9080 | 75 | 80 |
| 21... | 1515 | .16 | 29.0 | 24 | .01 | -- | -- |

| DATE | SED. SUSP. FALL DIAM. % FINER THAN .008 MM | SED. SUSP. FALL DIAM. % FINER THAN .016 MM | SED. SUSP. FALL DIAM. % FINER THAN .031 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM |
|---|---|---|---|---|---|---|
| DEC | | | | | | |
| 28... | -- | -- | -- | 55 | -- | -- |
| FEB | | | | | | |
| 05... | -- | -- | -- | 67 | -- | -- |
| MAR | | | | | | |
| 17... | -- | -- | -- | 53 | -- | -- |
| APR | | | | | | |
| 23... | -- | -- | -- | 84 | -- | -- |
| 24... | 89 | 97 | 98 | 99 | 99 | 100 |
| MAY | | | | | | |
| 15... | 93 | 98 | 99 | 99 | 99 | 100 |
| 21... | -- | -- | -- | 92 | -- | -- |

## 07299300 LITTLE RED RIVER NEAR TURKEY, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 47900 | 29900 | 46600 | 46900 | 47000 | | | | --- | | --- | --- |
| 2 | 48300 | 33400 | 47000 | 46600 | 45400 | | | | --- | | --- | --- |
| 3 | 48500 | 38300 | 46400 | 46900 | 44800 | | | | --- | | --- | --- |
| 4 | 48600 | 42800 | 46900 | 46700 | 44600 | | | | --- | | --- | --- |
| 5 | 49400 | 45300 | 46800 | 47000 | 45400 | | | | --- | | --- | --- |
| 6 | 48900 | 46700 | 47700 | 47700 | 46400 | | | | --- | | --- | --- |
| 7 | 48700 | 47000 | 47600 | 48600 | 47200 | | | | --- | | --- | --- |
| 8 | 49300 | 46200 | 47800 | 48300 | 42900 | | | | --- | | --- | --- |
| 9 | 49400 | 45900 | 47400 | 48300 | 73700 | | | | --- | | --- | --- |
| 10 | 48800 | 45900 | 46700 | 46800 | 65700 | | | | 50400 | | --- | --- |
| 11 | 49000 | 45900 | 47400 | 48500 | 59800 | | | | --- | | --- | --- |
| 12 | 49000 | 44900 | 47400 | 48700 | 57900 | | | | --- | | --- | --- |
| 13 | 49000 | 46000 | 47400 | 48200 | 55900 | | | | --- | | --- | --- |
| 14 | 48800 | 45700 | 43700 | 48200 | 52900 | | | | --- | | --- | 6950 |
| 15 | 48200 | 45700 | 45500 | 47400 | 52000 | | | | --- | | 28500 | --- |
| 16 | 48700 | 45900 | 46700 | 47200 | 44400 | | | | --- | | 28600 | --- |
| 17 | 48900 | 46900 | 48500 | 47600 | 46100 | | | | --- | | --- | --- |
| 18 | 48200 | 46600 | 47200 | 47200 | 89000 | | | | --- | | --- | --- |
| 19 | 47700 | 47300 | 46400 | 47200 | 98100 | | | | --- | | --- | --- |
| 20 | 49200 | 47500 | 45900 | 47500 | 95200 | | | | --- | | 43900 | --- |
| 21 | 50000 | 44800 | 46400 | 41700 | 84500 | | | | --- | | --- | --- |
| 22 | 50800 | 44800 | 46900 | 44400 | 63900 | | | | --- | | --- | --- |
| 23 | 51000 | 44200 | 47600 | 45500 | 56500 | | | | --- | | --- | --- |
| 24 | 50800 | 45400 | 48000 | 45700 | 54300 | | | | --- | | --- | --- |
| 25 | 49900 | 45600 | 47700 | 47100 | 51500 | | | | --- | | --- | --- |
| 26 | 49500 | 45600 | 47600 | 47300 | 51800 | | | | --- | | --- | 35500 |
| 27 | 48900 | 46400 | 47600 | 47800 | 50100 | | | | --- | | --- | 68000 |
| 28 | 49300 | 47300 | 46600 | 47100 | 49600 | | | | --- | | --- | 99800 |
| 29 | 49100 | 47300 | 46900 | 47600 | 49200 | | | | --- | | --- | 90300 |
| 30 | --- | 47400 | 47000 | 46900 | --- | | | | --- | | --- | 73400 |
| 31 | 26000 | --- | --- | 47300 | --- | | | | --- | | --- | --- |
| MEAN | 48300 | 44800 | 47000 | 47100 | 57400 | | | | 50400 | | 33700 | 62300 |

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25.0 | 8.5 | 10.0 | 4.0 | 1.0 | | | | --- | | | |
| 2 | 15.0 | 5.0 | 1.5 | 5.0 | 2.0 | | | | --- | | | |
| 3 | 16.5 | 8.0 | 3.5 | 5.0 | 6.0 | | | | --- | | | |
| 4 | 19.0 | 9.0 | 7.0 | 6.0 | 5.0 | | | | --- | | | |
| 5 | 15.0 | 11.5 | 10.0 | 6.0 | 5.5 | | | | --- | | | |
| 6 | 18.0 | 9.5 | 5.0 | 7.0 | 4.5 | | | | --- | | | |
| 7 | 15.0 | 10.0 | 5.0 | 2.0 | 8.0 | | | | --- | | | |
| 8 | 16.0 | 12.0 | --- | 5.5 | 1.5 | | | | --- | | | |
| 9 | 15.0 | 12.0 | 9.5 | 2.5 | 2.0 | | | | --- | | | |
| 10 | 10.0 | 7.0 | 6.0 | 2.5 | 4.5 | | | | 29.0 | | | |
| 11 | 13.5 | 7.0 | 10.0 | 5.0 | 10.0 | | | | --- | | | |
| 12 | 16.0 | 7.5 | 5.0 | 13.5 | 11.0 | | | | --- | | | |
| 13 | 15.0 | 5.0 | 4.5 | 10.5 | 12.0 | | | | --- | | | |
| 14 | 16.0 | 6.0 | 4.5 | 7.5 | 15.5 | | | | --- | | | |
| 15 | 18.0 | 7.5 | 4.0 | 11.0 | 10.0 | | | | --- | | | |
| 16 | 16.0 | 6.0 | 3.0 | 6.0 | 5.0 | | | | --- | | | |
| 17 | 19.0 | 8.0 | 3.5 | 6.5 | 7.0 | | | | --- | | | |
| 18 | 20.0 | 12.0 | 4.5 | 7.5 | 10.5 | | | | --- | | | |
| 19 | 19.0 | 10.0 | 2.5 | 12.0 | 10.0 | | | | --- | | | |
| 20 | 15.0 | 13.0 | 2.5 | 5.0 | 15.5 | | | | --- | | | |
| 21 | 17.5 | 8.5 | 7.5 | 6.0 | 8.5 | | | | --- | | | |
| 22 | 10.0 | 4.5 | 9.0 | 5.0 | 16.0 | | | | --- | | | |
| 23 | 10.0 | 9.0 | 7.5 | 3.5 | 20.5 | | | | --- | | | |
| 24 | 11.0 | 16.0 | 4.5 | 5.0 | 10.0 | | | | --- | | | |
| 25 | 10.0 | 16.5 | 5.5 | 8.0 | 8.0 | | | | --- | | | |
| 26 | 15.0 | 5.0 | 5.5 | 4.0 | 7.0 | | | | --- | | | |
| 27 | 15.0 | 7.5 | 6.0 | 5.0 | 6.0 | | | | --- | | | |
| 28 | 12.5 | 5.0 | 10.0 | 1.0 | 11.5 | | | | --- | | | |
| 29 | 13.0 | 3.0 | 6.0 | .0 | --- | | | | --- | | | |
| 30 | 10.5 | 1.0 | 5.0 | 1.5 | --- | | | | --- | | | |
| 31 | 5.5 | --- | 2.0 | 4.0 | --- | | | | --- | | | |
| MEAN | 15.0 | 8.5 | 5.5 | 5.5 | 8.5 | | | | 29.0 | | | |

## 07299300 LITTLE RED RIVER NEAR TURKEY, TX--Continued

### SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCEN-TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN-TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN-TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | |
| 1 | .10 | 125 | .03 | .16 | 45 | .02 | .15 | 130 | .05 |
| 2 | .10 | 70 | .02 | .15 | 32 | .01 | .15 | 130 | .05 |
| 3 | .10 | 85 | .02 | .10 | 100 | .03 | .15 | 115 | .05 |
| 4 | .06 | 60 | .00 | .12 | 110 | .04 | .13 | 95 | .03 |
| 5 | .06 | 70 | .01 | .09 | 75 | .02 | .11 | 150 | .04 |
| 6 | .04 | 105 | .01 | .11 | 85 | .03 | .11 | 197 | .06 |
| 7 | .05 | 115 | .02 | .11 | 100 | .03 | .12 | 162 | .05 |
| 8 | .04 | 90 | .00 | .14 | 115 | .04 | .11 | 105 | .03 |
| 9 | .03 | 95 | .00 | .13 | 77 | .03 | .14 | 110 | .04 |
| 10 | .04 | 70 | .00 | .13 | 72 | .03 | .13 | 118 | .04 |
| 11 | .04 | 75 | .00 | .13 | 77 | .03 | .12 | 135 | .04 |
| 12 | .04 | 55 | .00 | .11 | 82 | .02 | .13 | 95 | .03 |
| 13 | .04 | 35 | .00 | .10 | 52 | .01 | .17 | 90 | .04 |
| 14 | .03 | 30 | .00 | .07 | 75 | .01 | .23 | 60 | .04 |
| 15 | .04 | 50 | .00 | .09 | 58 | .01 | .14 | 80 | .03 |
| 16 | .02 | 47 | .00 | .08 | 55 | .01 | .15 | 125 | .05 |
| 17 | .01 | 87 | .00 | .06 | 55 | .00 | .19 | 142 | .07 |
| 18 | .01 | 70 | .00 | .06 | 47 | .00 | .13 | 87 | .03 |
| 19 | .01 | 60 | .00 | .09 | 55 | .01 | .11 | 115 | .03 |
| 20 | .01 | 67 | .00 | 11 | 2930 | 298 | .12 | 80 | .03 |
| 21 | .01 | 42 | .00 | 1.4 | 82 | .31 | .13 | 77 | .03 |
| 22 | .02 | 45 | .00 | .19 | 32 | .02 | .10 | 90 | .02 |
| 23 | .02 | 45 | .00 | .13 | 25 | .00 | .19 | 115 | .06 |
| 24 | .02 | 42 | .00 | .13 | 95 | .03 | .17 | 135 | .06 |
| 25 | .02 | 30 | .00 | .10 | 48 | .01 | .20 | 127 | .07 |
| 26 | .02 | 37 | .00 | .11 | 77 | .02 | .19 | 150 | .08 |
| 27 | .02 | 40 | .00 | .08 | 85 | .02 | .22 | 95 | .06 |
| 28 | .02 | 55 | .00 | .10 | 60 | .02 | .15 | 70 | .03 |
| 29 | .03 | 15 | .00 | .10 | 90 | .02 | .10 | 85 | .02 |
| 30 | 59 | 14100 | 2630 | .15 | 120 | .05 | .10 | 50 | .01 |
| 31 | 4.2 | 4990 | 105 | --- | --- | --- | .10 | 55 | .01 |
| TOTAL | 64.25 | --- | 2735.11 | 15.52 | --- | 298.88 | 4.44 | --- | 1.28 |

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCEN-TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN-TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN-TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---|---|---|---|---|---|---|---|---|---|
| | | JANUARY | | | FEBRUARY | | | MARCH | |
| 1 | .10 | 60 | .02 | .10 | 155 | .04 | .13 | 60 | .02 |
| 2 | .10 | 80 | .02 | .10 | 150 | .04 | .15 | 47 | .02 |
| 3 | .10 | 98 | .03 | .10 | 215 | .06 | .15 | 62 | .03 |
| 4 | .10 | 95 | .03 | .06 | 187 | .03 | .08 | 80 | .02 |
| 5 | .10 | 125 | .03 | .06 | 123 | .02 | .18 | 75 | .04 |
| 6 | .10 | 100 | .03 | .06 | 137 | .02 | .17 | 58 | .03 |
| 7 | .10 | 75 | .02 | .23 | 175 | .11 | .11 | 48 | .01 |
| 8 | .10 | 45 | .01 | .57 | 130 | .20 | .12 | 40 | .01 |
| 9 | .10 | 52 | .01 | .28 | 60 | .05 | .08 | 70 | .02 |
| 10 | .15 | 70 | .03 | .24 | 136 | .09 | .14 | 80 | .03 |
| 11 | .10 | 100 | .03 | .27 | 97 | .07 | .22 | 60 | .04 |
| 12 | .10 | 85 | .02 | .23 | 123 | .08 | .09 | 50 | .01 |
| 13 | .10 | 60 | .02 | .17 | 126 | .06 | .08 | 38 | .00 |
| 14 | .10 | 60 | .02 | .25 | 105 | .07 | .12 | 45 | .01 |
| 15 | .10 | 52 | .01 | .18 | 134 | .07 | .13 | 75 | .03 |
| 16 | .10 | 45 | .01 | .29 | 120 | .09 | .11 | 55 | .02 |
| 17 | .06 | 70 | .01 | .99 | 146 | .39 | .09 | 27 | .00 |
| 18 | .06 | 60 | .00 | 3.2 | 108 | .93 | .07 | 45 | .00 |
| 19 | .23 | 57 | .04 | 2.9 | 84 | .66 | .11 | 75 | .02 |
| 20 | .19 | 32 | .02 | .37 | 195 | .19 | .13 | 23 | .00 |
| 21 | .10 | 15 | .00 | .24 | 205 | .13 | .08 | 40 | .00 |
| 22 | .06 | 45 | .00 | .20 | 186 | .10 | .16 | 37 | .02 |
| 23 | .04 | 61 | .00 | .30 | 130 | .11 | .13 | 75 | .03 |
| 24 | .04 | 14 | .00 | .23 | 140 | .09 | .07 | 72 | .01 |
| 25 | .06 | 32 | .00 | .21 | 104 | .06 | .07 | 47 | .00 |
| 26 | .06 | 23 | .00 | .20 | 121 | .07 | .13 | 25 | .00 |
| 27 | .06 | 53 | .00 | .15 | 114 | .05 | 11 | 2950 | 385 |
| 28 | .06 | 5 | .00 | .18 | 138 | .07 | 3.9 | 2240 | 50 |
| 29 | .06 | 6 | .00 | .15 | 65 | .03 | 2.2 | 80 | .48 |
| 30 | .10 | 29 | .00 | --- | --- | --- | .33 | 55 | .05 |
| 31 | .10 | 60 | .02 | --- | --- | --- | .16 | 36 | .02 |
| TOTAL | 2.93 | --- | 0.43 | 12.51 | --- | 3.98 | 20.69 | --- | 435.97 |

## 07299300 LITTLE RED RIVER NEAR TURKEY, TX--Continued

### SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---|---|---|---|---|---|---|---|---|---|
| | | APRIL | | | MAY | | | JUNE | |
| 1 | .15 | 60 | .02 | .07 | 85 | .02 | 2.6 | 87 | .61 |
| 2 | .19 | 75 | .04 | .02 | 75 | .00 | 1.6 | 70 | .30 |
| 3 | .15 | 60 | .02 | .01 | 55 | .00 | .80 | 60 | .13 |
| 4 | .15 | 40 | .02 | .01 | 45 | .00 | .34 | 60 | .06 |
| 5 | .19 | 30 | .02 | .01 | 48 | .00 | .19 | 62 | .03 |
| 6 | .15 | 50 | .02 | .05 | 67 | .00 | .15 | 92 | .04 |
| 7 | .15 | 85 | .03 | .01 | 82 | .00 | .06 | 90 | .01 |
| 8 | .15 | 85 | .03 | .06 | 72 | .01 | .04 | 62 | .00 |
| 9 | .15 | 72 | .03 | .01 | 55 | .00 | .06 | 67 | .01 |
| 10 | .15 | 57 | .02 | .01 | 42 | .00 | .15 | 100 | .04 |
| 11 | .19 | 57 | .03 | .01 | 40 | .00 | 37 | 11100 | 1660 |
| 12 | .19 | 57 | .03 | .00 | --- | --- | 5.8 | 2750 | 62 |
| 13 | .19 | 52 | .03 | .01 | 70 | .00 | .34 | 90 | .08 |
| 14 | .15 | 48 | .02 | .07 | 62 | .01 | .04 | 80 | .00 |
| 15 | .19 | 45 | .02 | 353 | 16100 | 26700 | .01 | 72 | .00 |
| 16 | .15 | 35 | .01 | 37 | 6950 | 1250 | .51 | 70 | .10 |
| 17 | .10 | 40 | .01 | 2.6 | 115 | .81 | .23 | 90 | .06 |
| 18 | .15 | 55 | .02 | .51 | 75 | .10 | .01 | 70 | .00 |
| 19 | .15 | 65 | .03 | .19 | 55 | .03 | .01 | 48 | .00 |
| 20 | .19 | 62 | .03 | .28 | 35 | .03 | .00 | --- | --- |
| 21 | .15 | 42 | .02 | .23 | 35 | .02 | .02 | 25 | .00 |
| 22 | .10 | 35 | .00 | .23 | 54 | .03 | .00 | --- | --- |
| 23 | .06 | 25 | .00 | .15 | 60 | .02 | .00 | --- | --- |
| 24 | 18 | 6560 | 635 | .10 | 80 | .02 | .00 | --- | --- |
| 25 | 22 | 7970 | 1170 | .10 | 72 | .02 | .00 | --- | --- |
| 26 | .66 | 2500 | 4.5 | .15 | 57 | .02 | .00 | --- | --- |
| 27 | .06 | 80 | .01 | .10 | 45 | .01 | .00 | --- | --- |
| 28 | .03 | 55 | .00 | 13 | 5180 | 416 | .00 | --- | --- |
| 29 | .03 | 52 | .00 | 45 | 11900 | 2240 | .00 | --- | --- |
| 30 | .09 | 80 | .02 | 6.0 | 1000 | 16 | .00 | --- | --- |
| 31 | --- | --- | --- | 3.8 | 125 | 1.3 | --- | --- | --- |
| TOTAL | 44.41 | --- | 1810.03 | 462.79 | --- | 30624.45 | 49.96 | --- | 1723.47 |

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---|---|---|---|---|---|---|---|---|---|
| | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | .00 | | | .00 | --- | --- | .00 | --- | --- |
| 2 | .00 | | | .00 | --- | --- | .00 | --- | --- |
| 3 | .00 | | | .00 | --- | --- | .00 | --- | --- |
| 4 | .00 | | | .00 | --- | --- | .00 | --- | --- |
| 5 | .00 | | | .00 | --- | --- | .00 | --- | --- |
| 6 | .00 | | | .00 | --- | --- | .00 | --- | --- |
| 7 | .00 | | | .00 | --- | --- | .00 | --- | --- |
| 8 | .00 | | | .00 | --- | --- | .00 | --- | --- |
| 9 | .00 | | | .00 | --- | --- | .00 | --- | --- |
| 10 | .00 | | | .00 | --- | --- | .00 | --- | --- |
| 11 | .00 | | | .00 | --- | --- | .00 | --- | --- |
| 12 | .00 | | | .00 | --- | --- | .00 | --- | --- |
| 13 | .00 | | | .00 | --- | --- | 90 | 6590 | 6650 |
| 14 | .00 | | | .00 | --- | --- | 15 | 6630 | 598 |
| 15 | .00 | | | 29 | 5930 | 627 | 1.1 | 130 | .39 |
| 16 | .00 | | | .94 | 3500 | 8.9 | .80 | 110 | .24 |
| 17 | .00 | | | .00 | --- | --- | .64 | 127 | .22 |
| 18 | .00 | | | .00 | --- | --- | .64 | 145 | .25 |
| 19 | .00 | | | .01 | 100 | .00 | .51 | 135 | .19 |
| 20 | .00 | | | .19 | 136 | .07 | .28 | 120 | .09 |
| 21 | .00 | | | .00 | --- | --- | .28 | 155 | .12 |
| 22 | .00 | | | .00 | --- | --- | .23 | 142 | .09 |
| 23 | .00 | | | .00 | --- | --- | .34 | 165 | .15 |
| 24 | .00 | | | .00 | --- | --- | .51 | 180 | .25 |
| 25 | .00 | | | .00 | --- | --- | .40 | 205 | .22 |
| 26 | .00 | | | .00 | --- | --- | 1.9 | 210 | 1.1 |
| 27 | .00 | | | .00 | --- | --- | 41 | 11900 | 1440 |
| 28 | .00 | | | .00 | --- | --- | 20 | 4490 | 439 |
| 29 | .00 | | | .00 | --- | --- | 2.1 | 70 | .40 |
| 30 | .00 | | | .00 | --- | --- | .51 | 20 | .03 |
| 31 | .00 | | | .00 | --- | --- | --- | --- | --- |
| TOTAL | 0.00 | | | 30.14 | --- | 635.97 | 176.24 | --- | 9130.74 |
| YEAR | 883.88 | | 47400.31 | | | | | | |

## 07299512 JONAH CREEK AT WEIR NEAR ESTELLINE, TX

LOCATION.--Lat 34°34'20", long 100°20'00", Childress County, Hydrologic Unit 11120105, on left bank 4 mi (6 km) upstream from mouth and 6.5 mi (10.5 km) northeast of Estelline.

DRAINAGE AREA.--65.5 $mi^2$ (169.6 $km^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1974 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,701.03 ft (518.47 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Water-discharge records fair. Low flow is regulated by an unknown amount of water diverted 0.25 mi (0.40 km) upstream. Water is diverted from a collection system and pumped into a disposal well that penetrates the Ellenberger Formation at a depth of 7,480 ft (2,280 m).

AVERAGE DISCHARGE.--6 years (water years 1974-80), 1.79 $ft^3/s$ (0.051 $m^3/s$), 1,300 acre-ft/yr (1.60 $hm^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,680 $ft^3/s$ (47.6 $m^3/s$) May 28, 1978, gage height, 5.35 ft (1.631 m), from rating curve extended above 3.5 $ft^3/s$ (0.099 $m^3/s$) on basis of Francis weir formula; no flow for part of many days.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 264 $ft^3/s$ (7.48 $m^3/s$) May 29 at 2300 hours, gage height, 3.01 ft 0.917 m), no peak above base of 500 $ft^3/s$ (14.2 $m^3/s$); minimum, 0.16 $ft^3/s$ (0.005 $m^3/s$).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .67 | .72 | .69 | .65 | .63 | .34 | .52 | 4.5 | .93 | .69 | .52 | .39 |
| 2 | .65 | .72 | .63 | .69 | .65 | .37 | 1.6 | 1.2 | .87 | .66 | .46 | .35 |
| 3 | .65 | .72 | .65 | .65 | .65 | .44 | .58 | .75 | .83 | .67 | .40 | .37 |
| 4 | .68 | .65 | .68 | .65 | .72 | .45 | .57 | .77 | .76 | .62 | .46 | .36 |
| 5 | .62 | .65 | .59 | .65 | .71 | .40 | .60 | 1.2 | .81 | .58 | .40 | .37 |
| 6 | .60 | .65 | .45 | .75 | .63 | .43 | .78 | .96 | .72 | .59 | .46 | .35 |
| 7 | .65 | .65 | .45 | .59 | 1.1 | .52 | .60 | .89 | .72 | .59 | .46 | .33 |
| 8 | .84 | .65 | .50 | .59 | 1.5 | .50 | .37 | 1.4 | .72 | .59 | .46 | .38 |
| 9 | .65 | .66 | .66 | .60 | .91 | .51 | .49 | .88 | .78 | .59 | .46 | .75 |
| 10 | .61 | .58 | .64 | .68 | .80 | .51 | .56 | .99 | .84 | .59 | .46 | 1.5 |
| 11 | .65 | .67 | .68 | .58 | .75 | .60 | .55 | .94 | 1.3 | .59 | .52 | .48 |
| 12 | .66 | .82 | .64 | .57 | .65 | .49 | .64 | 1.0 | .59 | .59 | .46 | .36 |
| 13 | .69 | .75 | .65 | .72 | .65 | .57 | .71 | .93 | .65 | .59 | .53 | .38 |
| 14 | .73 | .75 | .65 | .70 | .67 | .66 | .78 | 2.0 | .65 | .59 | .51 | .37 |
| 15 | .63 | .65 | .65 | .72 | .77 | .53 | .78 | 66 | .72 | .59 | .88 | .34 |
| 16 | .61 | .65 | .72 | .63 | .99 | .65 | .84 | 17 | 1.1 | .59 | .52 | .36 |
| 17 | .71 | .62 | .72 | .60 | .77 | .59 | .78 | 1.7 | .81 | .59 | .49 | .39 |
| 18 | .72 | .65 | .73 | .59 | .73 | .59 | .78 | 1.0 | 1.5 | .52 | .98 | .39 |
| 19 | .72 | .63 | .70 | 2.2 | .75 | .59 | .84 | 1.0 | .75 | .52 | .40 | .39 |
| 20 | .65 | 2.4 | .59 | 1.2 | .68 | .65 | .90 | 1.4 | .68 | .52 | .40 | .41 |
| 21 | .65 | .72 | .59 | .77 | .72 | .57 | .84 | .92 | 1.1 | 1.6 | .46 | .42 |
| 22 | .65 | .65 | .65 | .67 | .72 | .65 | .90 | .83 | .68 | .59 | .40 | .38 |
| 23 | .72 | .65 | .72 | .62 | .66 | .76 | 2.5 | .85 | .66 | .59 | .40 | .36 |
| 24 | .72 | .65 | .72 | .60 | .75 | .51 | 9.6 | 1.0 | .64 | .59 | .40 | .44 |
| 25 | .72 | .65 | .72 | .63 | .70 | .54 | 1.7 | 1.0 | .63 | .65 | .40 | .45 |
| 26 | .76 | .65 | .72 | .68 | .41 | .61 | .90 | 3.4 | .64 | .65 | .34 | 3.1 |
| 27 | .72 | .65 | .72 | .65 | .40 | 1.7 | .78 | 1.6 | .64 | .65 | .40 | 2.3 |
| 28 | .76 | .59 | .65 | .68 | .39 | .74 | 1.0 | 3.4 | .64 | .59 | .60 | .76 |
| 29 | .74 | .59 | .65 | .72 | .43 | .64 | .81 | 75 | .59 | .59 | .40 | .68 |
| 30 | 9.5 | .59 | .65 | .73 | --- | .49 | 1.2 | 37 | .59 | .59 | .40 | .60 |
| 31 | .78 | --- | .65 | .63 | --- | .55 | --- | 2.3 | --- | .52 | .53 | --- |
| TOTAL | 30.11 | 21.63 | 20.11 | 22.39 | 20.89 | 18.15 | 34.50 | 233.81 | 23.56 | 19.47 | 14.96 | 18.51 |
| MEAN | .97 | .72 | .65 | .72 | .72 | .59 | 1.15 | 7.54 | .79 | .63 | .48 | .62 |
| MAX | 9.5 | 2.4 | .73 | 2.2 | 1.5 | 1.7 | 9.6 | 75 | 1.5 | 1.6 | .98 | 3.1 |
| MIN | .60 | .58 | .45 | .57 | .39 | .34 | .37 | .75 | .59 | .52 | .34 | .33 |
| AC-FT | 60 | 43 | 40 | 44 | 41 | 36 | 68 | 464 | 47 | 39 | 30 | 37 |

CAL YR 1979 TOTAL 999.82 MEAN 2.74 MAX 128 MIN .45 AC-FT 1980
WTR YR 1980 TOTAL 478.09 MEAN 1.31 MAX 75 MIN .33 AC-FT 948

## 07299512 JONAH CREEK AT WEIR NEAR ESTELLINE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1974 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 156,000 micromhos May 14, 1975; minimum daily, 4,920 micromhos May 28, 1978.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 141,000 micromhos May 27; minimum daily, 8,160 micromhos May 15.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | |
| 04... | 1415 | .65 | -- | 26.0 | -- | -- | -- | -- | -- | -- |
| 24... | 0750 | .72 | 99600 | 32.0 | 5900 | -- | 1700 | 410 | -- | -- |
| NOV | | | | | | | | | | |
| 14... | 0900 | .76 | 95600 | 8.0 | 6000 | 5900 | 1700 | 430 | 25000 | 140 |
| DEC | | | | | | | | | | |
| 04... | 0745 | .76 | -- | 5.5 | -- | -- | -- | -- | -- | -- |
| 12... | 1615 | .65 | -- | 13.0 | -- | -- | -- | -- | -- | -- |
| 27... | 0735 | 1.5 | -- | 7.5 | -- | -- | -- | -- | -- | -- |
| JAN | | | | | | | | | | |
| 16... | 0735 | .63 | 95700 | 7.5 | 5600 | 5500 | 1600 | 380 | 25000 | 146 |
| FEB | | | | | | | | | | |
| 05... | 0815 | .75 | 94900 | 5.5 | 5500 | 5400 | 1600 | 370 | 25000 | 146 |
| 26... | 0750 | .59 | -- | 4.5 | -- | -- | -- | -- | -- | -- |
| MAR | | | | | | | | | | |
| 19... | 1720 | .60 | -- | -- | -- | -- | -- | -- | -- | -- |
| APR | | | | | | | | | | |
| 07... | 1405 | 1.2 | -- | 29.0 | -- | -- | -- | -- | -- | -- |
| 24... | -- | 82 | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | 0745 | .81 | 89700 | 14.0 | 5600 | 5500 | 1600 | 400 | 24000 | 139 |
| MAY | | | | | | | | | | |
| 15... | -- | 127 | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | 1025 | 4.2 | -- | 26.0 | -- | -- | -- | -- | -- | -- |
| 20... | 1545 | 4.2 | 86500 | 26.0 | 6200 | 6100 | 1800 | 410 | 22000 | 122 |
| 26... | -- | 6.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN | | | | | | | | | | |
| 09... | 1825 | .74 | -- | 30.0 | -- | -- | -- | -- | -- | -- |
| 30... | 1040 | .59 | 104000 | 34.0 | 6100 | 6000 | 1700 | 450 | 28000 | 156 |
| 30... | 1440 | .52 | -- | 34.0 | -- | -- | -- | -- | -- | -- |
| JUL | | | | | | | | | | |
| 21... | 1715 | .78 | 122000 | 34.0 | 5900 | 5900 | 1700 | 410 | 34000 | 192 |
| AUG | | | | | | | | | | |
| 12... | 1330 | .46 | -- | 30.0 | -- | -- | -- | -- | -- | -- |
| SEP | | | | | | | | | | |
| 01... | 1630 | .37 | -- | 31.0 | -- | -- | -- | -- | -- | -- |

| DATE | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | |
| 04... | -- | -- | -- | -- | -- | -- | -- | 15 | .03 | 63 |
| 24... | -- | -- | -- | 4400 | 43000 | -- | -- | -- | -- | -- |
| NOV | | | | | | | | | | |
| 14... | 77 | 110 | 0 | 5400 | 39000 | 9.0 | 71700 | 26 | .05 | 78 |
| DEC | | | | | | | | | | |
| 04... | -- | -- | -- | -- | -- | -- | -- | 10 | .02 | 85 |
| 12... | -- | -- | -- | -- | -- | -- | -- | 78 | .14 | 98 |
| 27... | -- | -- | -- | -- | -- | -- | -- | 37 | .15 | 97 |
| JAN | | | | | | | | | | |
| 16... | 68 | 110 | 0 | 4400 | 39000 | 5.7 | 70500 | 10 | .02 | 69 |
| FEB | | | | | | | | | | |
| 05... | 65 | 110 | 0 | 4100 | 39000 | 5.6 | 70200 | 17 | .03 | 93 |
| 26... | -- | -- | -- | -- | -- | -- | -- | 16 | .03 | 68 |
| MAR | | | | | | | | | | |
| 19... | -- | -- | -- | -- | -- | -- | -- | 13 | .02 | 47 |
| APR | | | | | | | | | | |
| 07... | -- | -- | -- | -- | -- | -- | -- | 28 | .09 | 80 |
| 24... | -- | -- | -- | -- | -- | -- | -- | 3580 | 793 | 97 |
| 29... | 59 | 130 | 0 | 3000 | 38000 | 7.8 | 67100 | 14 | .03 | 78 |
| MAY | | | | | | | | | | |
| 15... | -- | -- | [illegible] | -- | -- | -- | -- | 5510 | 1890 | 97 |
| 20... | -- | -- | -- | -- | -- | -- | -- | 1010 | 12 | 99 |
| 20... | 62 | 82 | 0 | 4100 | 36000 | .5 | 64400 | 51 | .59 | 93 |
| 26... | -- | -- | -- | -- | -- | -- | -- | 4570 | 77 | 89 |
| JUN | | | | | | | | | | |
| 09... | -- | -- | -- | -- | -- | -- | -- | 8 | .02 | 90 |
| 30... | 76 | 78 | 0 | 5600 | 46000 | .6 | 81900 | -- | -- | -- |
| 30... | -- | -- | -- | -- | -- | -- | -- | 52 | .07 | 28 |
| JUL | | | | | | | | | | |
| 21... | 65 | 78 | 0 | 5000 | 55000 | .5 | 96200 | 54 | .11 | 97 |
| AUG | | | | | | | | | | |
| 12... | -- | -- | -- | -- | -- | -- | -- | 27 | .03 | 92 |
| SEP | | | | | | | | | | |
| 01... | -- | -- | -- | -- | -- | -- | -- | 141 | .14 | 98 |

## 07299512 JONAH CREEK AT WEIR NEAR ESTELLINE, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | TEMPER-ATURE, WATER (DEG C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM |
|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | |
| 04... | 1415 | .65 | 26.0 | 15 | .03 | 63 | -- | -- | -- |
| NOV | | | | | | | | | |
| 14... | 0900 | .76 | 8.0 | 26 | .05 | 78 | -- | -- | -- |
| DEC | | | | | | | | | |
| 04... | 0745 | .76 | 5.5 | 10 | .02 | 85 | -- | -- | -- |
| 12... | 1615 | .65 | 13.0 | 78 | .14 | 98 | -- | -- | -- |
| 27... | 0735 | 1.5 | 7.5 | 37 | .15 | 97 | -- | -- | -- |
| JAN | | | | | | | | | |
| 16... | 0735 | .63 | 7.5 | 10 | .02 | 69 | -- | -- | -- |
| FEB | | | | | | | | | |
| 05... | 0815 | .75 | 5.5 | 17 | .03 | 93 | -- | -- | -- |
| 26... | 0750 | .59 | 4.5 | 16 | .03 | 68 | -- | -- | -- |
| MAR | | | | | | | | | |
| 19... | 1720 | .60 | -- | 13 | .02 | 47 | -- | -- | -- |
| APR | | | | | | | | | |
| 07... | 1405 | 1.2 | 29.0 | 28 | .09 | 80 | -- | -- | -- |
| 24... | -- | 82 | -- | 3580 | 793 | 97 | 98 | 99 | 100 |
| 29... | 0745 | .81 | 14.0 | 14 | .03 | 78 | -- | -- | -- |
| MAY | | | | | | | | | |
| 15... | -- | 127 | -- | 5510 | 1890 | 97 | 99 | 99 | 100 |
| 20... | 1025 | 4.2 | 26.0 | 1010 | 12 | 99 | -- | -- | -- |
| 20... | 1545 | 4.2 | 26.0 | 51 | .59 | 93 | -- | -- | -- |
| 26... | -- | 6.2 | -- | 4570 | 77 | 89 | 98 | 99 | 100 |
| JUN | | | | | | | | | |
| 09... | 1825 | .74 | 30.0 | 8 | .02 | 90 | -- | -- | -- |
| 30... | 1440 | .52 | 34.0 | 52 | .07 | 28 | -- | -- | -- |
| JUL | | | | | | | | | |
| 21... | 1715 | .78 | 34.0 | 54 | .11 | 97 | -- | -- | -- |
| AUG | | | | | | | | | |
| 12... | 1330 | .46 | 30.0 | 27 | .03 | 92 | -- | -- | -- |
| SEP | | | | | | | | | |
| 01... | 1630 | .37 | 31.0 | 141 | .14 | 98 | -- | -- | -- |

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 30.11 | 83800 | 61600 | 5010 | 33700 | 2740 | 4200 | 342 | * |
| NOV. | 1979 | 21.63 | 91300 | 67700 | 3960 | 36900 | 2160 | 4600 | 267 | * |
| DEC. | 1979 | 20.11 | 97400 | 73600 | 4000 | 39900 | 2170 | 4900 | 265 | * |
| JAN. | 1980 | 22.39 | 89800 | 66400 | 4020 | 36200 | 2190 | 4500 | 272 | * |
| FEB. | 1980 | 20.89 | 87400 | 64100 | 3620 | 35100 | 1980 | 4400 | 247 | * |
| MAR. | 1980 | 18.15 | 96600 | 72900 | 3570 | 39600 | 1940 | 4800 | 237 | * |
| APR. | 1980 | 34.50 | 78700 | 56800 | 5290 | 31200 | 2900 | 3900 | 367 | * |
| MAY | 1980 | 233.81 | 28000 | 18400 | 11600 | 10400 | 6560 | 1400 | 889 | * |
| JUNE | 1980 | 23.56 | 96000 | 72300 | 4600 | 39300 | 2500 | 4800 | 306 | * |
| JULY | 1980 | 19.47 | 105700 | 82000 | 4310 | 44200 | 2320 | 5300 | 278 | * |
| AUG. | 1980 | 14.96 | 97200 | 73500 | 2970 | 39900 | 1610 | 4900 | 197 | * |
| SEPT | 1980 | 18.51 | 88700 | 65700 | 3280 | 35800 | 1790 | 4400 | 222 | * |
| TOTAL | | 478.09 | ** | ** | 56300 | ** | 30900 | ** | 3890 | ** |
| WTD. AVG. | | 1.3 | 60100 | 43600 | ** | 24000 | ** | 3000 | ** | ** |

## 07299512 JONAH CREEK AT WEIR NEAR ESTELLINE, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 101000 | 84100 | 97400 | 95000 | 96000 | 98400 | 101000 | 73300 | 75000 | 100000 | 101000 | 104000 |
| 2 | 103000 | 84800 | 97000 | 95300 | 95500 | 96900 | 83600 | 51200 | 78700 | 98500 | 102000 | 101000 |
| 3 | 104000 | 87600 | 95800 | 95200 | 95200 | 97300 | 95400 | 77700 | 81900 | 100000 | 100000 | 101000 |
| 4 | 101000 | 90200 | 96600 | 95500 | 94500 | 98600 | 94400 | 82500 | 88400 | 101000 | 101000 | 102000 |
| 5 | 98400 | 91300 | 98000 | 95900 | 94900 | 98100 | 98000 | 79600 | 93500 | 101000 | 101000 | 104000 |
| 6 | 96800 | 92000 | 97000 | 93300 | 94600 | 97400 | 100000 | 61500 | 98500 | 102000 | 101000 | 104000 |
| 7 | 98500 | 92700 | 96700 | 94100 | 90600 | 96900 | 98400 | 75500 | 102000 | 101000 | 101000 | 104000 |
| 8 | 89500 | 92800 | 96900 | 95600 | 70700 | 97300 | 100000 | 70200 | 102000 | 101000 | 102000 | 104000 |
| 9 | 95700 | 94400 | 95200 | 95300 | 79500 | 96600 | 95700 | 75700 | 98800 | 103000 | 102000 | 98900 |
| 10 | 99600 | 94600 | 95200 | 94700 | 80200 | 97000 | 95700 | 89400 | 96600 | 104000 | 100000 | 71400 |
| 11 | 101000 | 95500 | 97000 | 95500 | 83000 | 97300 | 99400 | 91700 | 94400 | 107000 | 100000 | 86200 |
| 12 | 102000 | 95100 | 98900 | 96200 | 86000 | 97700 | 100000 | 101000 | 94000 | 109000 | 99300 | 95000 |
| 13 | 102000 | 95300 | 98900 | 94000 | 86000 | 99000 | 99400 | 108000 | 94800 | 112000 | 99100 | 93900 |
| 14 | 101000 | 95600 | 99900 | 94600 | 85200 | 98400 | 98400 | 87400 | 95600 | 111000 | 97900 | 95900 |
| 15 | 98100 | 95100 | 99800 | 94200 | 88200 | 99800 | 96600 | 8160 | 96600 | 110000 | 107000 | 97700 |
| 16 | 98000 | 94300 | 99300 | 95700 | 80100 | 102000 | 97000 | 12800 | 99200 | 113000 | 98400 | 98600 |
| 17 | 96900 | 94200 | 99000 | 93700 | 77500 | 101000 | 98400 | 50100 | 101000 | 115000 | 97300 | 101000 |
| 18 | 95900 | 94400 | 97700 | 93400 | 84500 | 101000 | 97500 | 76100 | 98700 | 116000 | 83700 | 100000 |
| 19 | 94800 | 93700 | 98400 | 69300 | 84400 | 99800 | 95700 | 78200 | 99400 | 118000 | 77400 | 100000 |
| 20 | 95900 | 77000 | 98900 | 70700 | 86000 | 101000 | 95300 | 91400 | 100000 | 121000 | 82600 | 102000 |
| 21 | 96700 | 91200 | 99600 | 76500 | 90100 | 99700 | 96200 | 102000 | 97600 | 122000 | 83700 | 103000 |
| 22 | 97900 | 93700 | 98400 | 85400 | 92300 | 100000 | 95700 | 94100 | 98500 | 104000 | 85100 | 103000 |
| 23 | 98600 | 92900 | 97600 | 91500 | 93000 | 102000 | 69500 | 98000 | 99500 | 100000 | 87300 | 104000 |
| 24 | 99500 | 92100 | 96900 | 94600 | 93700 | 100000 | 53700 | 104000 | 100000 | 99000 | 90200 | 103000 |
| 25 | 97100 | 93900 | 96500 | 94000 | 93500 | 98600 | 64200 | 101000 | 101000 | 98900 | 93600 | 102000 |
| 26 | 97500 | 94800 | 96200 | 93700 | 96000 | 99000 | 70600 | 98100 | 98700 | 96900 | 97100 | 69300 |
| 27 | 99700 | 95500 | 95900 | 94200 | 94600 | 79700 | 77000 | 141000 | 100000 | 97800 | 97800 | 72400 |
| 28 | 97200 | 96800 | 95000 | 93500 | 93900 | 85900 | 83300 | 112000 | 101000 | 96600 | 106000 | 87600 |
| 29 | 97500 | 97500 | 96900 | 92600 | 96200 | 96800 | 89700 | 22400 | 103000 | 97400 | 107000 | 98900 |
| 30 | 54200 | 96300 | 96900 | 92300 | --- | 97200 | 81700 | 20700 | 104000 | 99200 | 104000 | 101000 |
| 31 | 74700 | --- | 96000 | 96500 | --- | 99200 | --- | 57200 | --- | 101000 | 104000 | --- |
| MEAN | 96200 | 92600 | 97400 | 92000 | 88800 | 97700 | 90700 | 77200 | 96400 | 105000 | 97100 | 97000 |

## 07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX
(National stream-quality accounting network station)

LOCATION.--Lat 34°34'09", long 100°11'37", Childress County, Hydrologic Unit 11120105, on left bank at downstream side of bridge on U.S. Highways 62 and 83, 3.1 mi (5.0 km) downstream from Salt Creek, 10.0 mi (16.1 km) north of Childress, and at mile 1,061 (1,707 km).

DRAINAGE AREA.--7,725 mi$^2$ (20,008 km$^2$), of which 4,769 mi$^2$ (12,352 km$^2$) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1964 to March 1965 (gage heights only), April 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,628.4 ft (496.34 m) State Department of Highways and Public Transportation datum.

REMARKS.--Water-discharge records poor. Many small diversions above station. Flow is affected at times by discharge from flood-detention pools of 13 floodwater-retarding structures with combined detention capacity of 18,530 acre-ft (22.8 hm$^3$). These structures control runoff from 83.8 mi$^2$ (217 km$^2$).

AVERAGE DISCHARGE.--15 years (water years 1966-80), 109 ft$^3$/s (3.087 m$^3$/s), 78,970 acre-ft/yr (97.4 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,400 ft$^3$/s (2,450 m$^3$/s) May 28, 1978, gage height, 13.47 ft (4.106 m), from floodmark, from rating curve extended above 33,000 ft$^3$/s (935 m$^3$/s); maximum gage height, 13.94 ft (4.249 m) May 21, 1977; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1899, 16.9 ft (5.15 m) in May or June 1957, from information by local residents and State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,830 ft$^3$/s (108 m$^3$/s) June 11 at 2145 hours, gage height, 8.74 ft (2.664 m), no peak above base of 7,000 ft$^3$/s (198 m$^3$/s); minimum daily, 0.08 ft$^3$/s (0.002 m$^3$/s), Sept. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.9 | 19 | 5.4 | 6.3 | 7.0 | 4.9 | 3.5 | 35 | 51 | 1.2 | .27 | .51 |
| 2 | 2.5 | 7.3 | 5.2 | 6.3 | 8.0 | 5.2 | 7.2 | 68 | 17 | 1.8 | .15 | .90 |
| 3 | 2.2 | 3.9 | 5.3 | 7.0 | 11 | 4.1 | 5.5 | 36 | 9.2 | 1.1 | .15 | 1.8 |
| 4 | 2.2 | 3.9 | 5.5 | 7.0 | 10 | 5.5 | 5.0 | 26 | 4.7 | 1.1 | .15 | .44 |
| 5 | 2.8 | 3.9 | 5.3 | 7.0 | 9.9 | 3.2 | 4.3 | 23 | 3.0 | 1.1 | .44 | .44 |
| 6 | 3.3 | 3.9 | 5.2 | 7.2 | 8.7 | 4.0 | 5.4 | 23 | 2.2 | .90 | 1.1 | .44 |
| 7 | 3.6 | 4.4 | 5.1 | 7.4 | 14 | 4.3 | 3.5 | 20 | 5.0 | .72 | 1.3 | .72 |
| 8 | 3.0 | 7.8 | 5.0 | 7.0 | 23 | 3.7 | 2.9 | 25 | 5.0 | .72 | .72 | 2.2 |
| 9 | 2.9 | 5.0 | 5.0 | 7.0 | 18 | 4.0 | 2.5 | 17 | 5.0 | .72 | .57 | 3.4 |
| 10 | 2.5 | 3.9 | 5.0 | 7.3 | 14 | 3.7 | 4.0 | 19 | 5.6 | .72 | 1.1 | 36 |
| 11 | 2.5 | 3.9 | 5.0 | 7.1 | 16 | 4.8 | 5.0 | 15 | 458 | .90 | .90 | 42 |
| 12 | 3.0 | 3.9 | 5.0 | 7.0 | 11 | 6.5 | 3.3 | 14 | 1030 | .90 | .72 | 11 |
| 13 | 2.9 | 5.0 | 5.6 | 7.1 | 11 | 3.7 | 4.5 | 12 | 341 | .72 | .70 | 17 |
| 14 | 2.8 | 6.0 | 7.8 | 7.0 | 11 | 2.8 | 4.4 | 22 | 128 | .35 | .61 | 53 |
| 15 | 3.2 | 5.8 | 7.8 | 7.0 | 13 | 3.0 | 4.5 | 743 | 71 | .35 | 5.2 | 156 |
| 16 | 3.9 | 4.8 | 6.3 | 6.1 | 5.7 | 3.9 | 5.4 | 1630 | 52 | .57 | 2.2 | 120 |
| 17 | 4.4 | 4.3 | 5.6 | 6.2 | 6.1 | 3.1 | 5.7 | 257 | 48 | .57 | .91 | 34 |
| 18 | 4.6 | 4.9 | 5.9 | 6.3 | 5.6 | 1.8 | 3.6 | 106 | 50 | .72 | .92 | 8.7 |
| 19 | 3.7 | 4.2 | 5.0 | 26 | 5.4 | 2.7 | 5.4 | 43 | 65 | .72 | 2.1 | 2.2 |
| 20 | 2.2 | 29 | 5.0 | 31 | 5.7 | 4.9 | 6.1 | 85 | 41 | .90 | 1.4 | .20 |
| 21 | 1.7 | 12 | 5.6 | 18 | 5.6 | 2.1 | 6.3 | 75 | 31 | 1.1 | 21 | .08 |
| 22 | 1.7 | 8.4 | 7.8 | 9.6 | 5.6 | 3.0 | 6.6 | 61 | 19 | 2.0 | 3.3 | .08 |
| 23 | 2.0 | 7.7 | 9.7 | 7.7 | 5.0 | 5.5 | 7.3 | 61 | 70 | .63 | .56 | .15 |
| 24 | 2.9 | 8.4 | 9.7 | 7.8 | 5.6 | 3.1 | 89 | 54 | 45 | .38 | .27 | .72 |
| 25 | 3.4 | 8.4 | 9.7 | 7.7 | 4.4 | 2.3 | 63 | 40 | 13 | .42 | .16 | 1.3 |
| 26 | 3.3 | 7.7 | 7.0 | 7.3 | 4.8 | 3.1 | 87 | 44 | 3.0 | .57 | .17 | 46 |
| 27 | 3.2 | 6.1 | 6.3 | 6.8 | 5.0 | 8.0 | 43 | 119 | 2.2 | 1.1 | .23 | 213 |
| 28 | 2.6 | 6.1 | 6.6 | 6.5 | 5.2 | 7.2 | 27 | 44 | 1.6 | 1.3 | .29 | 135 |
| 29 | 1.6 | 5.8 | 6.3 | 6.2 | 5.1 | 5.0 | 24 | 463 | 2.0 | .90 | .43 | 48 |
| 30 | 93 | 5.6 | 6.3 | 6.2 | --- | 2.9 | 47 | 500 | 2.5 | .57 | .18 | 29 |
| 31 | 129 | --- | 6.3 | 6.2 | --- | 2.0 | --- | 138 | --- | .44 | .17 | --- |
| TOTAL | 305.5 | 211.0 | 192.3 | 270.3 | 260.4 | 124.0 | 491.9 | 4818 | 2581.0 | 26.19 | 48.37 | 964.28 |
| MEAN | 9.85 | 7.03 | 6.20 | 8.72 | 8.98 | 4.00 | 16.4 | 155 | 86.0 | .84 | 1.56 | 32.1 |
| MAX | 129 | 29 | 9.7 | 31 | 23 | 8.0 | 89 | 1630 | 1030 | 2.0 | 21 | 213 |
| MIN | 1.6 | 3.9 | 5.0 | 6.1 | 4.4 | 1.8 | 2.5 | 12 | 1.6 | .35 | .15 | .08 |
| AC-FT | 606 | 419 | 381 | 536 | 517 | 246 | 976 | 9560 | 5120 | 52 | 96 | 1910 |

CAL YR 1979 TOTAL 33347.86 MEAN 91.4 MAX 4310 MIN .57 AC-FT 66150
WTR YR 1980 TOTAL 10293.24 MEAN 28.1 MAX 1630 MIN .08 AC-FT 20420

## 07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1968 to current year. Chemical and biochemical analyses: January 1978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1968 to current year.
WATER TEMPERATURES: July 1968 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 98,100 micromhos June 18, July 8, and Aug. 9, 1970; minimum daily, 3,000 micromhos Aug. 13, 1971.
WATER TEMPERATURES: Maximum daily 40.0°C July 24, 1980; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 90,900 micromhos Aug. 6; minimum daily, 4,210 micromhos May 29.
WATER TEMPERATURES: Maximum daily, 40.0°C July 24; minimum daily, 1.0°C Nov. 29.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) | STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | | |
| 30... | 1630 | 59 | 27000 | 7.6 | 14.0 | 900 | 10.7 | 122 | 8.1 | 2400 | 2200 |
| NOV | | | | | | | | | | | |
| 28... | 0945 | 6.1 | 72000 | 8.1 | 1.0 | 3.8 | 11.5 | 119 | .8 | K11 | 51 |
| DEC | | | | | | | | | | | |
| 04... | 1330 | 5.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 19... | 1215 | 7.0 | 66100 | 8.1 | 6.0 | 36 | 10.2 | 117 | 4.8 | <1 | 350 |
| 27... | 1010 | 6.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN | | | | | | | | | | | |
| 16... | 0900 | 6.1 | 69500 | 7.8 | 5.0 | 19 | 10.7 | 124 | 1.2 | K15 | 340 |
| FEB | | | | | | | | | | | |
| 25... | 1700 | 4.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | 1330 | 5.0 | 70200 | 7.9 | 19.0 | -- | 9.6 | 145 | 2.0 | K4 | <4 |
| MAR | | | | | | | | | | | |
| 20... | 0745 | 4.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 26... | 1500 | 4.2 | 76000 | 7.9 | 25.0 | 23 | 8.2 | 144 | 4.1 | K8 | K12 |
| APR | | | | | | | | | | | |
| 23... | 1000 | 8.7 | 75500 | 7.9 | 24.0 | 2.4 | 7.9 | 136 | 3.4 | K10 | <1 |
| MAY | | | | | | | | | | | |
| 13... | 1515 | 15 | 77500 | 8.2 | 27.0 | 5.0 | 8.1 | 150 | 4.2 | K4 | K12 |
| JUN | | | | | | | | | | | |
| 25... | 1115 | 13 | 40450 | 8.1 | 27.0 | 320 | 7.8 | 120 | 2.9 | 120 | 40 |
| JUL | | | | | | | | | | | |
| 23... | 0945 | .90 | 83000 | 7.9 | 36.0 | 5.0 | 5.7 | 95 | .9 | K8 | K16 |
| AUG | | | | | | | | | | | |
| 20... | 0830 | 1.6 | 85000 | 7.6 | 23.0 | 19 | 7.6 | 133 | 2.2 | K4 | K37 |
| SEP | | | | | | | | | | | |
| 03... | 1345 | 2.6 | 85500 | 8.1 | 31.0 | .80 | 6.6 | 132 | 1.4 | K4 | 84 |

| DATE | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | | |
| 30... | 2300 | 2200 | 710 | 120 | 5600 | 51 | 24 | 60 | 0 | 1800 | 9300 |
| NOV | | | | | | | | | | | |
| 28... | 4900 | 4700 | 1400 | 330 | 18000 | 112 | 50 | 150 | 0 | 4100 | 29000 |
| DEC | | | | | | | | | | | |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 19... | 4900 | 4800 | 1400 | 340 | 16000 | 100 | 26 | 140 | 0 | 3700 | 25000 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN | | | | | | | | | | | |
| 16... | 4900 | 4800 | 1400 | 350 | 16000 | 99 | 46 | 120 | 0 | 3400 | 26000 |
| FEB | | | | | | | | | | | |
| 25... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | 5000 | 4900 | 1400 | 370 | 17000 | 104 | 66 | 100 | 0 | 4300 | 27000 |
| MAR | | | | | | | | | | | |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 26... | 3900 | 3800 | 1100 | 270 | 15000 | 105 | 48 | 110 | 0 | 4600 | 23000 |
| APR | | | | | | | | | | | |
| 23... | 5600 | 5500 | 1600 | 380 | 19000 | 111 | 67 | 110 | 0 | 4600 | 31000 |
| MAY | | | | | | | | | | | |
| 13... | 5900 | 5800 | 1700 | 400 | 19000 | 108 | 49 | 90 | 0 | 4500 | 31000 |
| JUN | | | | | | | | | | | |
| 25... | 3400 | 3300 | 990 | 220 | 8900 | 67 | 50 | 130 | 0 | 2300 | 15000 |
| JUL | | | | | | | | | | | |
| 23... | 6200 | 6100 | 1800 | 410 | 20000 | 111 | 59 | 90 | 0 | 4400 | 34000 |
| AUG | | | | | | | | | | | |
| 20... | 6200 | 6200 | 1800 | 420 | 22000 | 121 | 70 | 80 | 0 | 5100 | 36000 |
| SEP | | | | | | | | | | | |
| 03... | 5900 | 5800 | 1700 | 400 | 22000 | 125 | 76 | 100 | 0 | 3900 | 37000 |

## 07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) | NITROGEN, AMMONIA TOTAL (MG/L AS N) | NITROGEN, AMMONIA DISSOLVED (MG/L AS N) | NITROGEN, ORGANIC TOTAL (MG/L AS N) | NITROGEN, ORGANIC DISSOLVED (MG/L AS N) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | |
| 30... | .3 | 5.3 | 18100 | 17600 | .25 | .28 | .320 | -- | 2.8 | -- |
| NOV | | | | | | | | | | |
| 28... | .6 | 9.9 | 51100 | 53000 | .40 | .40 | .430 | .370 | .06 | .02 |
| DEC | | | | | | | | | | |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 19... | .5 | 9.8 | -- | 46500 | .05 | .03 | .750 | .660 | .01 | .07 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN | | | | | | | | | | |
| 16... | .7 | 9.7 | 49900 | 47300 | .12 | .12 | .490 | .240 | .00 | .00 |
| FEB | | | | | | | | | | |
| 25... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | .6 | -- | 51200 | 50100 | .13 | .13 | .470 | .430 | .31 | .00 |
| MAR | | | | | | | | | | |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 26... | .6 | 8.2 | 43100 | 44100 | .27 | .22 | .510 | .390 | .18 | .03 |
| APR | | | | | | | | | | |
| 23... | 1.0 | 9.1 | 57600 | 56700 | .05 | .04 | .430 | .340 | 2.7 | .26 |
| MAY | | | | | | | | | | |
| 13... | .7 | 6.8 | 62400 | 56700 | .03 | .03 | .340 | .410 | .48 | -- |
| JUN | | | | | | | | | | |
| 25... | .9 | 14 | 27300 | 27500 | .18 | .19 | .160 | .010 | 1.3 | .25 |
| JUL | | | | | | | | | | |
| 23... | .3 | 5.3 | 61100 | 60700 | .00 | .02 | .420 | .390 | .22 | .24 |
| AUG | | | | | | | | | | |
| 20... | .8 | 7.4 | 64600 | 65400 | .00 | .00 | .000 | .000 | .73 | .77 |
| SEP | | | | | | | | | | |
| 03... | .8 | 8.3 | 63500 | 65100 | .00 | .00 | .310 | .380 | .55 | .72 |

| DATE | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | PHOSPHORUS, DISSOLVED (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | CARBON, ORGANIC DISSOLVED (MG/L AS C) | CARBON, ORGANIC SUSPENDED (MG/L AS C) | SEDIMENT, SUSPENDED (MG/L) | SEDIMENT DISCHARGE, SUSPENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | |
| 30... | 3.1 | 1.1 | 1.100 | .050 | -- | 11 | .9 | 7460 | 1190 | 98 |
| NOV | | | | | | | | | | |
| 28... | .49 | .39 | .020 | .010 | 2.0 | -- | -- | 59 | .97 | 65 |
| DEC | | | | | | | | | | |
| 04... | -- | -- | -- | -- | -- | -- | -- | 13 | .19 | 79 |
| 19... | .76 | .73 | .010 | .010 | 3.9 | -- | -- | 50 | .94 | 64 |
| 27... | -- | -- | -- | -- | -- | -- | -- | 9 | .15 | 55 |
| JAN | | | | | | | | | | |
| 16... | .18 | .08 | .030 | .030 | 3.5 | -- | -- | -- | -- | -- |
| FEB | | | | | | | | | | |
| 25... | -- | -- | -- | -- | -- | -- | -- | 61 | .72 | 54 |
| 27... | .78 | .30 | .060 | .050 | -- | 2.8 | 1.6 | 12 | .16 | 60 |
| MAR | | | | | | | | | | |
| 20... | -- | -- | -- | -- | -- | -- | -- | 27 | .32 | 48 |
| 26... | .69 | .42 | .040 | .070 | 1.8 | -- | -- | 23 | .26 | 88 |
| APR | | | | | | | | | | |
| 23... | 3.1 | .59 | .050 | .040 | 4.6 | -- | -- | 5 | .12 | 76 |
| MAY | | | | | | | | | | |
| 13... | .82 | -- | .040 | .040 | 4.1 | -- | -- | 6 | .24 | 69 |
| JUN | | | | | | | | | | |
| 25... | 1.5 | .26 | .200 | .000 | -- | 4.4 | 2.1 | 300 | 11 | 96 |
| JUL | | | | | | | | | | |
| 23... | .64 | .63 | .030 | .050 | 4.6 | -- | -- | 10 | .02 | 42 |
| AUG | | | | | | | | | | |
| 20... | .73 | .77 | .030 | .020 | -- | 3.0 | .5 | 115 | .50 | 96 |
| SEP | | | | | | | | | | |
| 03... | .86 | 1.1 | .020 | .020 | 5.8 | -- | -- | 52 | .37 | 95 |

## 07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUS-PENDED TOTAL (UG/L AS AS) | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) | BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) | CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 30... | 1630 | 10 | 8 | 2 | 1000 | 300 | 700 | 0 | 0 | 2 | 56 |
| DEC 19... | 1215 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FEB 27... | 1330 | 22 | 21 | 1 | 600 | 0 | 600 | 0 | 0 | 0 | 80 |
| MAR 26... | 1500 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 13... | 1515 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 25... | 1115 | 7 | 0 | 7 | 400 | 200 | 200 | 0 | 0 | 0 | 30 |
| AUG 20... | 0830 | 3 | 0 | 3 | 500 | 0 | 500 | 0 | 0 | 0 | 80 |
| SEP 03... | 1345 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) | COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) | COBALT, DIS-SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) | COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, TOTAL RECOV-ERABLE (UG/L AS FE) | IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 30... | 40 | 16 | 17 | 17 | 0 | 62 | 59 | 3 | 26000 | 26000 | 100 |
| DEC 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FEB 27... | 20 | 60 | 2 | 0 | 2 | 4 | 3 | 1 | 420 | 210 | 210 |
| MAR 26... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 25... | 0 | 40 | 3 | 3 | 0 | 21 | 17 | 4 | 5100 | 5100 | 50 |
| AUG 20... | 40 | 40 | 1 | 0 | 1 | 2 | 1 | 1 | 590 | 180 | 410 |
| SEP 03... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) | LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) | MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) | MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) | MERCURY DIS-SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) | NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 30... | 29 | 29 | 0 | 1400 | 1300 | 70 | 4.2 | 2.9 | 1.3 | 48 | 48 |
| DEC 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FEB 27... | 4 | 4 | 0 | 180 | 10 | 170 | 1.2 | .5 | .7 | 3 | 3 |
| MAR 26... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 25... | 11 | 10 | 1 | 280 | 270 | 10 | .0 | .0 | .1 | 35 | 30 |
| AUG 20... | 0 | 0 | 2 | 170 | 40 | 130 | .0 | .0 | .3 | 3 | 3 |
| SEP 03... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | NICKEL, DIS-SOLVED (UG/L AS NI) | SELE-NIUM, TOTAL (UG/L AS SE) | SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) | SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) | ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 30... | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 170 | 150 | 20 |
| DEC 19... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| FEB 27... | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 50 | 20 | 30 |
| MAR 26... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| MAY 13... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| JUN 25... | 5 | 2 | 0 | 2 | 0 | 0 | 0 | 80 | 50 | 30 |
| AUG 20... | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 60 | 0 | 60 |
| SEP 03... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |

## 07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX--Continued

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE<br>TIME | NOV 28,79<br>0945 | MAR 1,80<br>0000 | MAY 13,80<br>1515 | JUN 25,80<br>1115 |
|---|---|---|---|---|
| TOTAL CELLS/ML | 920 | 430 | 15000 | 45000 |
| DIVERSITY: DIVISION | 0.9 | 0.0 | 0.5 | 1.5 |
| .CLASS | 0.9 | 0.0 | 0.5 | 1.5 |
| ..ORDER | 0.9 | 0.0 | 0.6 | 1.9 |
| ...FAMILY | 1.3 | 1.5 | 0.8 | 2.4 |
| ....GENUS | 1.3 | 1.6 | 0.8 | 3.1 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | | | |
| .CHLOROPHYCEAE | | | | | | | | |
| ..CHLOROCOCCALES | | | | | | | | |
| ...OOCYSTACEAE | | | | | | | | |
| ....ANKISTRODESMUS | -- | - | -- | - | -- | - | 2100 | 5 |
| ....CHODATELLA | -- | - | -- | - | -- | - | 700 | 2 |
| ....OOCYSTIS | -- | - | -- | - | -- | - | 880 | 2 |
| ....SELENASTRUM | -- | - | -- | - | -- | - | -- | - |
| ....WESTELLA | -- | - | -- | - | -- | - | 700 | 2 |
| ...SCENEDESMACEAE | | | | | | | | |
| ....SCENEDESMUS | -- | - | -- | - | 270 | 2 | 2100 | 5 |
| ....TETRASTRUM | -- | - | -- | - | -- | - | 1400 | 3 |
| ..VOLVOCALES | | | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | | | |
| ....CHLAMYDOMONAS | -- | - | -- | - | 400 | 3 | * | 0 |
| CHRYSOPHYTA | | | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | | | |
| ..CENTRALES | | | | | | | | |
| ...CHAETOCERACEAE | | | | | | | | |
| ....CHAETOCEROS | -- | - | -- | - | 14000# | 89 | 2300 | 5 |
| ...COSCINODISCACEAE | | | | | | | | |
| ....CYCLOTELLA | -- | - | -- | - | 270 | 2 | 6500 | 15 |
| ....MELOSIRA | -- | - | -- | - | -- | - | 1600 | 4 |
| ....STEPHANODISCUS | -- | - | -- | - | -- | - | 880 | 2 |
| ..PENNALES | | | | | | | | |
| ...ACHNANTHACEAE | | | | | | | | |
| ....ACHNANTHES | -- | - | -- | - | -- | - | 1100 | 2 |
| ...CYMBELLACEAE | | | | | | | | |
| ....AMPHORA | -- | - | 36 | 8 | -- | - | -- | - |
| ....CYMBELLA | 14 | 2 | -- | - | -- | - | -- | - |
| ...EUNOTIACEAE | | | | | | | | |
| ....EUNOTIA | -- | - | 51 | 12 | -- | - | -- | - |
| ...FRAGILARIACEAE | | | | | | | | |
| ....FRAGILARIA | -- | - | -- | - | -- | - | -- | - |
| ....SYNEDRA | 14 | 2 | 10 | 2 | -- | - | * | 0 |
| ...NAVICULACEAE | | | | | | | | |
| ....ENTOMONEIS | -- | - | -- | - | 130 | 1 | -- | - |
| ....NAVICULA | 170# | 19 | 41 | 9 | -- | - | 530 | 1 |
| ....PLAGIOTROPIS | -- | - | 5 | 1 | -- | - | -- | - |
| ...NITZSCHIACEAE | | | | | | | | |
| ....NITZSCHIA | 72 | 8 | 290# | 67 | 130 | 1 | 530 | 1 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | | | |
| .CRYPTOPHYCEAE | | | | | | | | |
| ..CRYPTOMONADALES | | | | | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | | | | | |
| ....CHROOMONAS | -- | - | -- | - | 130 | 1 | -- | - |
| ...CRYPTOMONADACEAE | | | | | | | | |
| ....CRYPTOMONAS | -- | - | -- | - | 130 | 1 | * | 0 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | | | |
| .CYANOPHYCEAE | | | | | | | | |
| ..CHROOCOCCALES | | | | | | | | |
| ...CHROOCOCCACEAE | | | | | | | | |
| ....ANACYSTIS | -- | - | -- | - | -- | - | 2100 | 5 |
| ..HORMOGONALES | | | | | | | | |
| ...NOSTOCACEAE | | | | | | | | |
| ....ANABAENA | 650# | 70 | -- | - | -- | - | -- | - |
| ...OSCILLATORIACEAE | | | | | | | | |
| ....LYNGBYA | -- | - | -- | - | -- | - | 1800 | 4 |
| ....OSCILLATORIA | -- | - | -- | - | -- | - | 19000# | 43 |
| PYRRHOPHYTA (FIRE ALGAE) | | | | | | | | |
| .DINOPHYCEAE | | | | | | | | |
| ..PERIDINIALES | | | | | | | | |
| ...GLENODINIACEAE | | | | | | | | |
| ....GLENODINIUM | -- | - | -- | - | 130 | 1 | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX--Continued

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE | JUL 23,80 | AUG 20,80 | SEP 3,80 |
|---|---|---|---|
| TIME | 0945 | 0830 | 1345 |
| TOTAL CELLS/ML | 2700 | 890 | 890 |
| DIVERSITY: DIVISION | 0.9 | 1.9 | 1.9 |
| .CLASS | 0.9 | 1.9 | 1.9 |
| ..ORDER | 1.5 | 2.2 | 2.0 |
| ...FAMILY | 1.6 | 2.6 | 2.2 |
| ....GENUS | 1.6 | 2.6 | 2.2 |

| ORGANISM | CELLS /ML. | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | * | 0 | -- | - | -- | - |
| ....CHODATELLA | -- | - | -- | - | -- | - |
| ....OOCYSTIS | -- | - | -- | - | -- | - |
| ....SELENASTRUM | * | 0 | -- | - | -- | - |
| ....WESTELLA | -- | - | -- | - | -- | - |
| ...SCENEDESMACEAE | | | | | | |
| ....SCENEDESMUS | -- | - | -- | - | -- | - |
| ....TETRASTRUM | -- | - | -- | - | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | 26 | 1 | 26 | 3 | 120 | 13 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...CHAETOCERACEAE | | | | | | |
| ....CHAETOCEROS | -- | - | -- | - | -- | - |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 26 | 1 | 13 | 1 | -- | - |
| ....MELOSIRA | -- | - | -- | - | -- | - |
| ....STEPHANODISCUS | -- | - | -- | - | -- | - |
| ..PENNALES | | | | | | |
| ...ACHNANTHACEAE | | | | | | |
| ....ACHNANTHES | -- | - | -- | - | -- | - |
| ...CYMBELLACEAE | | | | | | |
| ....AMPHORA | -- | - | -- | - | -- | - |
| ....CYMBELLA | -- | - | -- | - | -- | - |
| ...EUNOTIACEAE | | | | | | |
| ....EUNOTIA | -- | - | -- | - | -- | - |
| ...FRAGILARIACEAE | | | | | | |
| ....FRAGILARIA | -- | - | -- | - | 39 | 4 |
| ....SYNEDRA | -- | - | -- | - | -- | - |
| ...NAVICULACEAE | | | | | | |
| ....ENTOMONEIS | -- | - | -- | - | -- | - |
| ....NAVICULA | 64 | 2 | 39 | 4 | 26 | 3 |
| ....PLAGIOTROPIS | -- | - | -- | - | -- | - |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 120 | 4 | 26 | 3 | 90 | 10 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | | | |
| ....CHROOMONAS | * | 0 | 100 | 12 | -- | - |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | 77 | 3 | 310# | 35 | 26 | 3 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....ANACYSTIS | 280 | 11 | 64 | 7 | 13 | 1 |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENA | -- | - | -- | - | -- | - |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | -- | - | -- | - |
| ....OSCILLATORIA | 1900# | 73 | 150# | 17 | 440# | 49 |
| PYRRHOPHYTA (FIRE ALGAE) | | | | | | |
| .DINOPHYCEAE | | | | | | |
| ..PERIDINIALES | | | | | | |
| ...GLENODINIACEAE | | | | | | |
| ....GLENODINIUM | 90 | 3 | 150# | 17 | 140# | 16 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 305.5 | 43900 | 30400 | 25000 | 16000 | 13200 | 2900 | 2400 | * |
| NOV. | 1979 | 211.0 | 63400 | 44900 | 25600 | 24300 | 13800 | 3900 | 2200 | * |
| DEC. | 1979 | 192.3 | 76400 | 55100 | 28600 | 30200 | 15700 | 4400 | 2270 | * |
| JAN. | 1980 | 270.3 | 70700 | 50500 | 36900 | 27500 | 20000 | 4200 | 3040 | * |
| FEB. | 1980 | 260.4 | 66600 | 47100 | 33100 | 25400 | 17800 | 4100 | 2860 | * |
| MAR. | 1980 | 124.0 | 72400 | 51800 | 17300 | 28200 | 9440 | 4300 | 1430 | * |
| APR. | 1980 | 491.9 | 45500 | 31400 | 41800 | 16600 | 22000 | 3000 | 4010 | * |
| MAY | 1980 | 4818 | 17600 | 11600 | 150000 | 5800 | 75400 | 1400 | 17600 | * |
| JUNE | 1980 | 2581.0 | 19100 | 12500 | 87000 | 6200 | 43400 | 1500 | 10400 | * |
| JULY | 1980 | 26.19 | 82500 | 60100 | 4250 | 33200 | 2350 | 4500 | 320 | * |
| AUG. | 1980 | 48.37 | 72000 | 51600 | 6750 | 28100 | 3680 | 4200 | 549 | * |
| SEPT | 1980 | 964.28 | 39400 | 26900 | 70200 | 14100 | 36700 | 2700 | 7000 | * |
| TOTAL | | 10293.24 | ** | ** | 527000 | ** | 274000 | ** | 54100 | ** |
| WTD. AVG. | | 28 | 27900 | 19000 | ** | 9800 | ** | 1900 | ** | ** |

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 76400 | 30500 | 79700 | 80200 | 67300 | 71800 | 75400 | 62300 | 24600 | 76100 | 87900 | 85000 |
| 2 | 81300 | 58800 | 74500 | 77200 | 73500 | 71300 | 76800 | 30500 | 35400 | 77200 | 83900 | 82100 |
| 3 | 80300 | 67500 | 73600 | 83500 | 66700 | 71400 | 84700 | 34900 | 46500 | 81000 | 83700 | 84200 |
| 4 | 79100 | 72100 | 74800 | 77700 | 66300 | 70300 | 80000 | 45000 | 60100 | 80700 | 84400 | 8280 |
| 5 | 78600 | 71800 | 76200 | 81200 | 68900 | 81600 | 72700 | 56800 | 75100 | 79900 | 82600 | 80000 |
| 6 | 78400 | 73600 | 77500 | 81100 | 75000 | 73100 | 74800 | 60000 | 81400 | 82900 | 90900 | 78900 |
| 7 | 78300 | 73700 | 77200 | 81700 | 65000 | 73800 | 78400 | 63300 | 84100 | 83300 | 86500 | 79500 |
| 8 | 78200 | 72500 | 76400 | 85300 | 60200 | 73500 | 78800 | 67000 | 87800 | 82800 | 82200 | 67900 |
| 9 | 80200 | 72400 | 75700 | 77500 | 59400 | 73200 | 80000 | 70700 | 86300 | 82400 | 83000 | 68300 |
| 10 | 78700 | 72600 | 73800 | 74200 | 60100 | 69800 | 81400 | 70000 | 83600 | 81800 | 83800 | 29700 |
| 11 | 79100 | 73000 | 72400 | 76600 | 59800 | 65900 | 79500 | 71800 | 24800 | 81000 | 83600 | 50800 |
| 12 | 78000 | 72800 | 75400 | 81400 | 65500 | 56900 | 82300 | 73200 | 12100 | 83100 | 78600 | 68100 |
| 13 | 77400 | 68500 | 70500 | 82600 | 70800 | 74500 | 81500 | 75900 | 14300 | 86500 | 81400 | 65000 |
| 14 | 79100 | 68000 | 68100 | 78000 | 68600 | 78200 | 80000 | 65500 | 16700 | 86200 | 81100 | 32500 |
| 15 | 76800 | 71100 | 69900 | 73800 | 67700 | 71900 | 78800 | 16400 | 18000 | 85500 | 85100 | 14000 |
| 16 | 76400 | 72300 | 79100 | 68100 | 66500 | 74300 | 81500 | 11900 | 17600 | 84400 | 84500 | 20000 |
| 17 | 75200 | 72200 | 87200 | 78200 | 65200 | 72000 | 80000 | 16300 | 24500 | 84000 | 78500 | 53700 |
| 18 | 74100 | 73700 | 83100 | 74200 | 65100 | 72400 | 81300 | 19700 | 18800 | 86400 | 77100 | 87400 |
| 19 | 77800 | 72800 | 75300 | 55300 | 65200 | 76100 | 81400 | 21000 | 22500 | 88500 | 79100 | 72000 |
| 20 | 78900 | 36900 | 78900 | 52500 | 82000 | 75500 | 75900 | 27500 | 24900 | 82400 | 78700 | 78000 |
| 21 | 84000 | 59700 | 72700 | 60500 | 73000 | 75100 | 75600 | 28300 | 30300 | 81200 | 60400 | 81000 |
| 22 | 83500 | 70000 | 75700 | 66000 | 70200 | 75500 | 76300 | 29000 | 33800 | 86200 | 65900 | 83000 |
| 23 | 81700 | 73900 | 77500 | 72200 | 71800 | 71400 | 76100 | 29900 | 21900 | 81000 | 76600 | 81200 |
| 24 | 80500 | 72700 | 77600 | 72500 | 70000 | 73300 | 32800 | 38300 | 50600 | 82300 | 82400 | 76500 |
| 25 | 76800 | 77500 | 77600 | 75500 | 70500 | 70300 | 29000 | 54800 | 66000 | 81900 | 83600 | 75000 |
| 26 | 76000 | 82500 | 78200 | 76800 | 71000 | 74800 | 26800 | 58600 | 68100 | 78500 | 81600 | 41400 |
| 27 | 77400 | 73400 | 77500 | 78000 | 71300 | 70500 | 40500 | 19700 | 69500 | 82000 | 81500 | 34300 |
| 28 | 77600 | 72000 | 72200 | 79600 | 69900 | 70000 | 48800 | 25000 | 73100 | 83800 | 85200 | 58300 |
| 29 | 77200 | 81900 | 77800 | 80200 | 70900 | 79800 | 63000 | 4210 | 69200 | 84100 | 85000 | 65900 |
| 30 | 38000 | 82900 | 82200 | 62600 | --- | 82000 | 41400 | 7500 | 75100 | 87100 | 90800 | 90900 |
| 31 | 26100 | --- | 81800 | 69500 | --- | 82500 | --- | 19600 | --- | 86500 | 89500 | --- |
| MEAN | 75500 | 69800 | 76500 | 74600 | 68200 | 73300 | 69900 | 41100 | 47200 | 82900 | 81900 | 63100 |

### 07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 23.0 | 9.0 | 5.0 | 12.0 | 7.0 | 4.0 | 21.0 | 20.0 | 30.0 | 39.0 | 37.0 | 31.0 |
| 2 | 25.0 | 15.0 | 12.0 | 11.0 | 6.0 | 14.0 | 17.0 | 22.0 | 27.0 | 36.0 | 38.0 | 30.0 |
| 3 | 20.0 | 5.0 | 4.0 | 5.0 | 9.0 | 8.0 | 17.0 | 25.0 | 27.0 | 33.0 | 39.0 | 32.0 |
| 4 | 25.5 | 20.0 | 5.0 | 4.0 | 6.0 | 17.0 | 14.0 | 25.0 | 24.0 | 35.0 | 39.0 | 32.0 |
| 5 | 27.0 | 21.0 | 16.0 | 2.0 | 8.0 | 10.0 | 23.0 | 27.0 | 28.0 | 37.0 | 38.0 | 34.0 |
| 6 | 20.0 | 7.0 | 7.0 | 2.5 | 8.0 | 24.0 | 21.0 | 29.0 | 32.0 | 36.0 | 35.0 | 33.0 |
| 7 | 29.0 | 12.0 | 15.0 | 5.0 | 7.0 | 28.0 | 23.0 | 27.0 | 34.0 | 38.0 | 35.0 | 34.0 |
| 8 | 31.0 | 10.0 | 11.0 | 4.0 | 10.0 | 12.0 | 20.0 | 26.0 | 28.0 | 39.0 | 35.0 | 32.0 |
| 9 | 22.0 | 10.0 | 14.0 | 7.0 | 9.0 | 22.0 | 24.0 | 27.0 | 27.0 | 35.0 | 35.0 | 31.0 |
| 10 | 20.0 | 4.0 | 17.0 | 10.0 | 7.0 | 20.0 | 29.0 | 29.0 | 29.0 | 39.0 | 35.0 | 20.0 |
| 11 | 29.0 | 11.0 | 8.0 | 10.0 | 5.0 | 20.0 | 17.0 | 23.0 | 24.0 | 36.0 | 32.0 | 31.0 |
| 12 | 27.0 | 12.0 | 3.0 | 15.0 | 5.0 | 18.0 | 14.0 | 24.0 | 30.0 | 38.0 | 31.0 | 34.0 |
| 13 | 15.0 | 13.0 | 3.0 | 18.0 | 10.0 | 15.0 | 20.0 | 27.0 | --- | 39.0 | 33.0 | 30.0 |
| 14 | 24.0 | 9.0 | 4.0 | 13.0 | 9.0 | 22.0 | 25.0 | 23.0 | --- | 39.0 | 35.0 | 35.0 |
| 15 | 18.0 | 8.0 | 6.0 | 10.0 | 4.0 | 30.0 | 23.0 | 23.0 | 23.0 | 35.0 | 33.0 | 30.0 |
| 16 | 24.0 | 17.0 | 7.0 | 7.0 | --- | 23.0 | 27.0 | 20.0 | 35.0 | 36.0 | 35.0 | 27.0 |
| 17 | 24.0 | 16.0 | 5.0 | 13.0 | 23.0 | 10.0 | 24.0 | 25.0 | 34.0 | 36.0 | 31.0 | 18.0 |
| 18 | 25.0 | 18.0 | 10.0 | 13.0 | 17.0 | 10.0 | 28.0 | 25.0 | 26.0 | 35.0 | 32.0 | 28.0 |
| 19 | 25.0 | 12.0 | 12.0 | 5.0 | 16.0 | 12.0 | 30.0 | 26.0 | 35.0 | 36.0 | 33.0 | 29.0 |
| 20 | 28.0 | 17.0 | 6.0 | 7.0 | 18.0 | 23.0 | --- | 25.0 | 35.0 | 33.0 | 35.0 | 30.0 |
| 21 | 26.0 | 9.0 | 13.0 | 5.0 | 25.0 | 18.0 | 25.0 | 19.0 | 36.0 | 34.0 | 30.0 | 33.0 |
| 22 | 18.0 | 10.0 | 10.0 | 6.0 | 10.0 | 15.0 | 27.0 | 19.0 | 35.0 | 38.0 | 32.0 | 20.0 |
| 23 | 20.0 | 12.0 | 12.0 | 5.0 | 10.0 | 15.0 | 23.0 | 27.0 | 30.0 | 38.0 | 30.0 | 20.0 |
| 24 | 21.0 | 18.0 | 10.0 | 7.0 | 11.0 | 15.0 | 23.0 | 23.0 | 38.0 | 40.0 | 35.0 | 22.0 |
| 25 | 23.0 | 16.0 | 13.0 | 11.0 | 8.0 | 9.0 | 23.0 | 30.0 | 32.0 | 35.0 | 32.0 | --- |
| 26 | 25.0 | 15.0 | 11.0 | --- | 9.0 | 10.0 | 17.0 | 28.0 | 32.0 | 36.0 | 33.0 | 24.0 |
| 27 | 20.0 | 5.0 | 13.0 | 5.0 | 11.0 | 20.0 | 21.0 | 21.0 | 38.0 | 35.0 | 30.0 | 13.0 |
| 28 | 21.0 | 3.0 | 7.0 | 6.0 | 23.0 | 25.0 | 11.0 | 25.0 | 30.0 | 37.0 | 32.0 | 20.0 |
| 29 | 15.0 | 1.0 | 4.0 | 6.0 | 8.0 | 15.0 | 30.0 | 27.0 | 37.0 | 35.0 | 33.0 | 20.0 |
| 30 | 10.0 | 5.0 | 5.0 | 6.0 | --- | 20.0 | 20.0 | 32.0 | 38.0 | 38.0 | 34.0 | 26.0 |
| 31 | 8.0 | --- | 8.0 | 5.0 | --- | 14.0 | --- | 27.0 | --- | 39.0 | 34.0 | --- |
| MEAN | 22.0 | 11.5 | 9.0 | 8.0 | 10.5 | 16.5 | 22.0 | 25.0 | 31.0 | 36.5 | 34.0 | 27.5 |

## 07299570 RED RIVER NEAR QUANAH, TX

LOCATION.--Lat 34°24'47", long 99°44'03", Hardeman County, Hydrologic Unit 11130101, on right bank at downstream side of bridge on State Highway 6, 8 mi (13 km) north of Quanah, 30 mi (48 km) upstream from Salt Fork Red River, and at mile 1,030 (1,657 km).

DRAINAGE AREA.--8,321 mi² (21,551 km²), of which 4,769 mi² (12,352 km²) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1959 to current year.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,412.97 ft (430.673 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Several small diversions above station for irrigation. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station No. 07299540.

AVERAGE DISCHARGE.--20 years (water years 1961-80), 146 ft³/s (4.135 m³/s), 105,800 acre-ft/yr (130 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,500 ft³/s (2,080 m³/s) May 28, 1978, gage height, 15.78 ft (4.810 m); maximum gage height, 16.00 ft (4.877 m) June 7, 1960; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1891 occurred in 1896, and reached a stage of about 23 ft (7.0 m); second highest stage occurred June 1, 1957, and reached a stage of 21.2 ft (6.46 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft³/s (142 m³/s) and maximum (*):

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| May 16 | 1315 | 10,500 | 297 | 9.29 | 2.832 |
| May 30 | 0700 | *14,300 | 405 | 9.83 | 2.996 |
| June 12 | 0800 | 10,300 | 292 | 9.26 | 2.822 |

Minimum discharge, no flow Aug. 25, 26, Sept. 22, 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.3 | 162 | 6.6 | 9.8 | 14 | 6.1 | 6.3 | 40 | 603 | 4.6 | .01 | .02 |
| 2 | 1.0 | 72 | 7.5 | 10 | 20 | 5.7 | 12 | 32 | 242 | 3.8 | .01 | .04 |
| 3 | 1.1 | 42 | 8.0 | 9.4 | 20 | 7.2 | 12 | 23 | 143 | 2.8 | .02 | .03 |
| 4 | .77 | 28 | 8.0 | 9.3 | 19 | 7.8 | 8.6 | 28 | 102 | 2.1 | .02 | .02 |
| 5 | 1.1 | 20 | 8.0 | 9.9 | 18 | 5.1 | 9.0 | 20 | 71 | 1.9 | .01 | .02 |
| 6 | 1.2 | 15 | 7.0 | 11 | 17 | 4.7 | 4.9 | 14 | 48 | 1.3 | .01 | .03 |
| 7 | 1.2 | 12 | 6.6 | 9.3 | 21 | 5.6 | 3.2 | 9.7 | 34 | 1.2 | .02 | .03 |
| 8 | 1.2 | 12 | 6.6 | 8.4 | 37 | 5.4 | 1.9 | 8.9 | 69 | .93 | .02 | .12 |
| 9 | 1.0 | 12 | 6.6 | 8.5 | 35 | 4.7 | 2.3 | 7.0 | 43 | .81 | .02 | .10 |
| 10 | .81 | 9.7 | 7.5 | 9.5 | 55 | 5.1 | 2.3 | 5.4 | 32 | .64 | .02 | .07 |
| 11 | 1.3 | 9.1 | 8.5 | 8.3 | 52 | 6.0 | 1.7 | 4.3 | 21 | .49 | .03 | .07 |
| 12 | 1.5 | 10 | 13 | 7.1 | 50 | 12 | 1.9 | 2.8 | 3570 | .42 | .03 | .06 |
| 13 | 1.3 | 9.1 | 13 | 7.5 | 52 | 9.8 | 1.9 | 2.1 | 1100 | .31 | .03 | .07 |
| 14 | 1.5 | 9.1 | 18 | 8.0 | 44 | 8.0 | 1.9 | 4.1 | 331 | .21 | .03 | .07 |
| 15 | 2.4 | 8.7 | 19 | 8.2 | 34 | 5.2 | 2.1 | 3220 | 164 | .14 | .03 | .07 |
| 16 | 3.1 | 8.2 | 18 | 8.3 | 26 | 5.2 | 1.9 | 7870 | 108 | .10 | .02 | .06 |
| 17 | 2.8 | 7.8 | 14 | 9.0 | 28 | 3.4 | 1.6 | 1330 | 84 | .12 | .02 | 3.9 |
| 18 | 2.8 | 6.9 | 12 | 9.1 | 30 | 3.1 | 1.7 | 272 | 68 | .09 | .02 | 2.0 |
| 19 | 2.9 | 6.2 | 12 | 53 | 36 | 3.0 | 2.0 | 103 | 60 | .08 | .02 | .54 |
| 20 | 2.3 | 34 | 13 | 70 | 42 | 3.6 | 2.1 | 52 | 50 | .06 | .02 | .06 |
| 21 | 1.9 | 29 | 14 | 84 | 36 | 3.0 | 1.8 | 320 | 48 | .07 | .12 | .01 |
| 22 | 1.5 | 23 | 13 | 59 | 22 | 3.4 | 1.8 | 175 | 37 | .04 | .36 | .00 |
| 23 | 1.9 | 18 | 15 | 44 | 15 | 15 | 2.0 | 60 | 29 | .02 | .01 | .00 |
| 24 | 2.4 | 13 | 11 | 34 | 14 | 7.4 | 30 | 30 | 18 | .01 | .01 | .04 |
| 25 | 2.7 | 11 | 9.6 | 29 | 12 | 5.2 | 417 | 18 | 32 | .01 | .00 | .03 |
| 26 | 2.8 | 9.6 | 9.1 | 24 | 10 | 4.5 | 429 | 13 | 19 | .01 | .00 | .90 |
| 27 | 2.9 | 8.5 | 9.6 | 20 | 9.4 | 11 | 150 | 190 | 12 | .01 | .01 | 4.8 |
| 28 | 2.8 | 7.0 | 13 | 19 | 9.0 | 19 | 77 | 275 | 8.6 | .03 | .01 | 48 |
| 29 | 3.0 | 6.2 | 11 | 18 | 8.9 | 32 | 46 | 2300 | 6.6 | .02 | .02 | 33 |
| 30 | 40 | 5.8 | 9.9 | 16 | --- | 20 | 37 | 7600 | 6.0 | .02 | .01 | 14 |
| 31 | 109 | --- | 9.1 | 15 | --- | 10 | --- | 1560 | --- | .01 | .01 | --- |
| TOTAL | 203.48 | 624.9 | 337.2 | 645.6 | 786.3 | 247.2 | 1272.9 | 25589.3 | 7159.2 | 22.35 | .97 | 108.16 |
| MEAN | 6.56 | 20.8 | 10.9 | 20.8 | 27.1 | 7.97 | 42.4 | 825 | 239 | .72 | .031 | 3.61 |
| MAX | 109 | 162 | 19 | 84 | 55 | 32 | 429 | 7870 | 3570 | 4.6 | .36 | 48 |
| MIN | .77 | 5.8 | 6.6 | 7.1 | 8.9 | 3.0 | 1.6 | 2.1 | 6.0 | .01 | .00 | .00 |
| AC-FT | 404 | 1240 | 669 | 1280 | 1560 | 490 | 2520 | 50760 | 14200 | 44 | 1.9 | 215 |

CAL YR 1979 TOTAL 70367.28 MEAN 193 MAX 10600 MIN .77 AC-FT 139600
WTR YR 1980 TOTAL 36997.56 MEAN 101 MAX 7870 MIN .00 AC-FT 73380

## 07299570 RED RIVER NEAR QUANAH, TX

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to September 1973. Pesticide analyses: March 1968 to September 1973. Sediment records: May 1978 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | TEMPER-ATURE, WATER (DEG C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. FALL DIAM. % FINER THAN .002 MM | SED. SUSP. FALL DIAM. % FINER THAN .004 MM |
|---|---|---|---|---|---|---|---|
| OCT<br>03... | 1135 | 1.2 | 18.0 | 42 | .15 | -- | -- |
| NOV<br>14... | 1635 | 8.8 | 15.5 | 112 | 2.7 | -- | -- |
| DEC<br>27... | 1220 | 9.5 | 9.0 | 16 | .41 | -- | -- |
| FEB<br>05... | 1245 | 18 | 10.0 | 50 | 2.4 | -- | -- |
| MAR<br>20... | 0945 | 3.8 | 10.0 | 65 | .67 | -- | -- |
| APR<br>29... | 1135 | 46 | 20.0 | 5310 | 660 | 74 | 90 |
| MAY<br>21... | 1155 | 298 | 20.0 | 3600 | 2900 | 60 | 67 |
| JUN<br>10... | 1025 | 32 | 24.0 | 689 | 60 | -- | -- |
| 10... | 1430 | 99 | 32.0 | 5360 | 1430 | 29 | 31 |
| JUL<br>22... | 0820 | .05 | 23.5 | 14 | .00 | -- | -- |
| SEP<br>02... | 1045 | .05 | 29.0 | 14 | .00 | -- | -- |

| DATE | SED. SUSP. FALL DIAM. % FINER THAN .008 MM | SED. SUSP. FALL DIAM. % FINER THAN .016 MM | SED. SUSP. FALL DIAM. % FINER THAN .031 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM |
|---|---|---|---|---|---|---|---|
| OCT<br>03... | -- | -- | -- | 97 | -- | -- | -- |
| NOV<br>14... | -- | -- | -- | 99 | -- | -- | -- |
| DEC<br>27... | -- | -- | -- | 90 | -- | -- | -- |
| FEB<br>05... | -- | -- | -- | 88 | -- | -- | -- |
| MAR<br>20... | -- | -- | -- | 96 | -- | -- | -- |
| APR<br>29... | 98 | 98 | 98 | 99 | 99 | 100 | -- |
| MAY<br>21... | 76 | 86 | 88 | 90 | 98 | 99 | 100 |
| JUN<br>10... | -- | -- | -- | 97 | -- | -- | -- |
| 10... | 90 | 96 | 97 | 98 | 99 | 100 | -- |
| JUL<br>22... | -- | -- | -- | 90 | -- | -- | -- |
| SEP<br>02... | -- | -- | -- | 88 | -- | -- | -- |

## 07299670 GROESBECK CREEK AT STATE HIGHWAY 6 NEAR QUANAH, TX

LOCATION.--Lat 34°21'16", long 99°44'24", Hardeman County, Hydrologic Unit 11130101, near left bank on downstream side of bridge on State Highway 6, 2 mi (3 km) downstream from confluence of North and South Groesbeck Creeks, 4 mi (6 km) north of Quanah, and 9 mi (14 km) upstream from mouth.

DRAINAGE AREA.--303 mi$^2$ (785 km$^2$).

PERIOD OF RECORD.--November 1961 to current year. Prior to October 1974, published as "at State Highway 283".

GAGE.--Water-stage recorder. Datum of gage is 1,425.69 ft (434.550 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several diversions upstream from station for farm and ranch use and for a gypsum wallboard plant. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--18 years (water years 1963-80), 13.8 ft$^3$/s (0.391 m$^3$/s), 0.62 in/yr (16 mm/yr), 10,000 acre-ft/yr (12.3 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,900 ft$^3$/s (394 m$^3$/s) Sept. 19, 1974, gage height, 23.56 ft (7.181 m), from rating curve extended above 6,100 ft$^3$/s (173 m$^3$/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest stage occurred in June 1891; highest stage since 1891 occurred in September 1929; other large floods are reported to have occurred in 1912, 1936, 1946, 1951, 1955, and 1957, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft$^3$/s (28.3 m$^3$/s) and maximum:

| Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| May 16 | 0030 | *2,060 | 58.3 | 16.72 | 5.096 |
| May 31 | 1600 | 1,400 | 39.6 | 15.61 | 4.758 |

Minimum discharge, 0.58 ft$^3$/s (0.016 m$^3$/s) Aug. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.7 | 6.5 | 7.7 | 6.9 | 7.7 | 6.5 | 5.0 | 8.7 | 193 | 4.9 | 2.5 | 2.6 |
| 2 | 5.3 | 6.0 | 7.9 | 7.1 | 7.7 | 6.6 | 5.0 | 7.2 | 35 | 4.9 | 2.4 | 2.3 |
| 3 | 4.8 | 6.1 | 7.9 | 7.0 | 7.7 | 6.9 | 5.1 | 6.2 | 16 | 4.6 | 2.4 | 2.1 |
| 4 | 4.7 | 6.1 | 7.8 | 7.1 | 7.7 | 7.2 | 4.8 | 6.3 | 9.4 | 4.5 | 2.5 | 2.2 |
| 5 | 6.0 | 5.8 | 7.9 | 7.2 | 7.7 | 7.0 | 4.6 | 9.5 | 8.4 | 4.5 | 2.5 | 2.1 |
| 6 | 5.8 | 5.9 | 8.0 | 7.2 | 7.4 | 6.9 | 4.6 | 8.0 | 7.8 | 4.4 | 2.4 | 2.1 |
| 7 | 5.8 | 7.3 | 8.2 | 6.8 | 7.6 | 6.5 | 4.5 | 6.9 | 7.4 | 4.4 | 2.1 | 2.1 |
| 8 | 5.4 | 6.7 | 7.5 | 7.2 | 8.4 | 6.5 | 4.1 | 6.5 | 7.4 | 4.3 | 2.0 | 2.2 |
| 9 | 4.3 | 6.2 | 7.1 | 7.5 | 8.4 | 7.0 | 4.1 | 6.0 | 7.3 | 4.3 | 2.0 | 2.7 |
| 10 | 5.2 | 6.0 | 9.7 | 7.0 | 7.9 | 7.3 | 4.4 | 6.2 | 7.0 | 4.3 | 2.1 | 2.8 |
| 11 | 6.3 | 6.1 | 9.1 | 7.0 | 7.7 | 6.9 | 4.6 | 6.0 | 6.9 | 4.4 | 2.1 | 2.4 |
| 12 | 6.6 | 6.4 | 8.2 | 6.8 | 7.6 | 7.2 | 4.1 | 6.1 | 7.0 | 4.5 | 2.0 | 2.1 |
| 13 | 6.2 | 6.3 | 8.1 | 7.2 | 7.5 | 7.0 | 3.8 | 5.8 | 7.0 | 4.4 | 2.0 | 2.5 |
| 14 | 7.2 | 6.2 | 8.0 | 7.4 | 7.6 | 6.7 | 3.9 | 5.7 | 7.2 | 4.2 | 1.9 | 2.4 |
| 15 | 6.9 | 6.3 | 8.2 | 7.7 | 7.5 | 6.8 | 3.9 | 427 | 7.4 | 4.0 | 1.9 | 2.4 |
| 16 | 7.0 | 6.2 | 7.5 | 8.6 | 7.4 | 6.7 | 3.8 | 1040 | 8.1 | 4.2 | 1.8 | 2.2 |
| 17 | 7.4 | 6.3 | 8.6 | 8.3 | 7.7 | 6.6 | 4.0 | 194 | 7.6 | 4.2 | 1.8 | 2.0 |
| 18 | 6.7 | 6.6 | 8.6 | 7.7 | 7.7 | 6.4 | 4.0 | 31 | 7.4 | 4.2 | 1.7 | 1.9 |
| 19 | 6.1 | 6.8 | 8.6 | 30 | 7.6 | 6.6 | 4.0 | 16 | 7.8 | 4.2 | 1.8 | 3.4 |
| 20 | 6.0 | 12 | 8.8 | 67 | 7.6 | 6.7 | 4.4 | 12 | 7.4 | 4.0 | 1.8 | 2.8 |
| 21 | 5.8 | 101 | 8.8 | 30 | 7.1 | 6.6 | 4.2 | 10 | 7.0 | 4.0 | 1.9 | 2.5 |
| 22 | 5.2 | 35 | 8.9 | 14 | 7.0 | 6.6 | 4.0 | 8.9 | 8.4 | 4.0 | 1.9 | 2.6 |
| 23 | 5.4 | 11 | 8.9 | 10 | 7.2 | 7.0 | 4.2 | 8.3 | 8.6 | 3.8 | 2.0 | 2.6 |
| 24 | 5.7 | 8.3 | 9.3 | 9.0 | 6.8 | 7.3 | 5.2 | 8.0 | 6.9 | 3.6 | 2.0 | 3.1 |
| 25 | 6.9 | 7.6 | 9.0 | 8.6 | 6.8 | 6.6 | 5.0 | 7.6 | 6.2 | 3.4 | 1.9 | 2.9 |
| 26 | 6.5 | 7.4 | 8.7 | 8.3 | 6.7 | 6.5 | 182 | 7.7 | 5.4 | 3.5 | 2.0 | 3.0 |
| 27 | 6.4 | 7.3 | 7.4 | 8.3 | 6.6 | 6.4 | 29 | 8.1 | 5.4 | 3.5 | 2.1 | 3.6 |
| 28 | 6.3 | 7.5 | 7.7 | 8.0 | 6.6 | 6.4 | 12 | 11 | 5.2 | 3.3 | 1.8 | 3.9 |
| 29 | 5.7 | 7.4 | 7.9 | 8.0 | 6.6 | 5.9 | 7.2 | 15 | 4.9 | 3.1 | .69 | 3.7 |
| 30 | 25 | 7.5 | 7.3 | 8.0 | --- | 5.7 | 6.6 | 9.1 | 5.1 | 2.6 | 3.5 | 3.8 |
| 31 | 11 | --- | 6.8 | 8.0 | --- | 5.2 | --- | 470 | --- | 2.5 | 3.6 | --- |
| TOTAL | 209.3 | 331.8 | 254.1 | 348.9 | 215.5 | 206.2 | 346.1 | 2378.8 | 435.6 | 124.7 | 65.09 | 79.0 |
| MEAN | 6.75 | 11.1 | 8.20 | 11.3 | 7.43 | 6.65 | 11.5 | 76.7 | 14.5 | 4.02 | 2.10 | 2.63 |
| MAX | 25 | 101 | 9.7 | 67 | 8.4 | 7.3 | 182 | 1040 | 193 | 4.9 | 3.6 | 3.9 |
| MIN | 4.3 | 5.8 | 6.8 | 6.8 | 6.6 | 5.2 | 3.8 | 5.7 | 4.9 | 2.5 | .69 | 1.9 |
| CFSM | .02 | .04 | .03 | .04 | .03 | .02 | .04 | .25 | .05 | .01 | .007 | .009 |
| IN. | .03 | .04 | .03 | .04 | .03 | .03 | .04 | .29 | .05 | .02 | .01 | .01 |
| AC-FT | 415 | 658 | 504 | 692 | 427 | 409 | 686 | 4720 | 864 | 247 | 129 | 157 |

CAL YR 1979 TOTAL 4660.20 MEAN 12.8 MAX 551 MIN 3.4 CFSM .04 IN .57 AC-FT 9240
WTR YR 1980 TOTAL 4995.09 MEAN 13.6 MAX 1040 MIN .69 CFSM .05 IN .61 AC-FT 9910

## 07299840 GREENBELT LAKE NEAR CLARENDON, TX

LOCATION.--Lat 35°00'02", long 100°53'40", Donley County, Hydrologic Unit 11120201, on upstream side near right end of dam on Salt Fork Red River and 4.3 mi (6.9 km) north of Clarendon.

DRAINAGE AREA.--457 mi² (1,184 km²), of which 191 mi² (495 km²) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1967 to current year. Prior to October 1973, published as Greenbelt Reservoir. Water-quality records· Chemical analyses: October 1969 to September 1978.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Freese, Nichols, and Endress, Consulting Engineers bench mark).

REMARKS.--The lake is formed by a rolled earthfill dam 5,800 ft (1,770 m) long. Deliberate impoundment began Dec. 5, 1966, and the dam was completed in August 1967. The dam is the property of Greenbelt Municipal and Industrial Water Authority and was built to impound water for municipal and industrial uses by the cities of Childress, Clarendon, Crowell, Hedley, and Quanah. The spillway is an uncontrolled open cut through natural ground, 1,450 ft (442 m) wide and located at the left end of dam, designed to discharge 184,000 ft³/s (5,210 m³/s) at an elevation of 2,684.0 ft (818.08 m). A morning-glory-type drop inlet with a 26 ft 8.5-inch-diameter (8.14 m) opening at crest discharges into a 7- by 7-foot (2 by 2 m) concrete conduit. The outlet works consists of a 36-inch (914 mm) pipe that is controlled by two 20-inch (508 mm) valves that control the discharge into a stilling basin and to a water treatment plant. The capacity table, dated April 1964, is based on Geological Survey topographic maps dated 1962. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 2,686.0 | - |
| Design flood | 2,683.0 | 105,600 |
| Crest of spillway | 2,674.0 | 81,760 |
| Crest of morning-glory-type drop inlet | 2,663.65 | 59,110 |
| Lowest gated outlet (invert) | 2,597.0 | 900 |

COOPERATION.--Records of diversion and capacity table furnished by Greenbelt Municipal and Industrial Water Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 44,650 acre-ft (55.1 hm³) June 26-28, 1975, elevation, 2,655.71 ft (809.460 m); minimum, 2,950 acre-ft (3.64 hm³) Aug. 29, 30, 1967, elevation, 2,607.37 ft (794.726 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 36,250 acre-ft (44.7 hm³) Oct. 1, elevation, 2,650.33 ft (807.821 m); minimum observed, 30,410 acre-ft (37.5 hm³) Sept. 30, elevation, 2,646.03 ft (806.510 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 2,645.0 | 29,120 | 2,649.0 | 34,360 |
| 2,647.0 | 31,660 | 2,651.0 | 37,230 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36250 | 35740 | 35460 | 35350 | 35330 | 35390 | 35400 | 35380 | 35710 | 34810 | 32940 | 31340 |
| 2 | 36210 | 35770 | 35460 | 35350 | 35330 | 35450 | 35430 | 35320 | 35690 | 34750 | 32860 | 31300 |
| 3 | 36120 | 35770 | 35460 | 35350 | 35330 | 35450 | 35390 | 35280 | 35660 | 34730 | 32820 | 31230 |
| 4 | 36060 | 35740 | 35430 | 35320 | 35350 | 35400 | 35400 | 35230 | 35640 | 34660 | 32760 | 31180 |
| 5 | 36050 | 35740 | 35430 | 35320 | 35350 | 35400 | 35400 | 35210 | 35640 | 34600 | 32640 | 31140 |
| 6 | 36030 | 35740 | 35430 | 35290 | 35360 | 35460 | 35380 | 35210 | 35600 | 34530 | 32620 | 31120 |
| 7 | 35970 | 35730 | 35430 | 35290 | 35360 | 35390 | 35320 | 35160 | 35560 | 34460 | 32560 | 31110 |
| 8 | 35890 | 35730 | 35430 | 35280 | 35390 | 35420 | 35320 | 35190 | 35490 | 34400 | 32500 | 31080 |
| 9 | 35830 | 35710 | 35400 | 35280 | 35390 | 35420 | 35330 | 35160 | 35450 | 34330 | 32440 | 31050 |
| 10 | 35770 | 35710 | 35400 | 35280 | 35390 | 35420 | 35300 | 35180 | 35450 | 34250 | 32390 | 31040 |
| 11 | 35710 | 35710 | 35400 | 35260 | 35400 | 35460 | 35250 | 35110 | 35640 | 34210 | 32350 | 30990 |
| 12 | 35690 | 35710 | 35400 | 35260 | 35430 | 35420 | 35220 | 35110 | 35630 | 34130 | 32280 | 30950 |
| 13 | 35660 | 35700 | 35380 | 35260 | 35460 | 35430 | 35190 | 35070 | 35600 | 34060 | 32230 | 30910 |
| 14 | 35660 | 35700 | 35380 | 35260 | 35450 | 35430 | 35180 | 35110 | 35520 | 33990 | 32190 | 30890 |
| 15 | 35660 | 35660 | 35350 | 35260 | 35420 | 35460 | 35190 | 35570 | 35500 | 33920 | 32190 | 30850 |
| 16 | 35630 | 35660 | 35350 | 35260 | 35430 | 35380 | 35150 | 35610 | 35490 | 33840 | 32150 | 30800 |
| 17 | 35630 | 35630 | 35350 | 35290 | 35430 | 35360 | 35120 | 35590 | 35460 | 33780 | 32110 | 30740 |
| 18 | 35630 | 35630 | 35350 | 35290 | 35470 | 35350 | 35110 | 35590 | 35420 | 33690 | 32030 | 30710 |
| 19 | 35570 | 35600 | 35320 | 35320 | 35500 | 35360 | 35280 | 35600 | 35380 | 33610 | 32010 | 30650 |
| 20 | 35520 | 35770 | 35320 | 35350 | 35490 | 35300 | 35590 | 35600 | 35330 | 33570 | 31970 | 30600 |
| 21 | 35400 | 35770 | 35320 | 35380 | 35520 | 35300 | 35530 | 35610 | 35290 | 33580 | 31950 | 30580 |
| 22 | 35320 | 35540 | 35350 | 35380 | 35520 | 35300 | 35470 | 35590 | 35250 | 33520 | 31910 | 30550 |
| 23 | 35300 | 35540 | 35380 | 35350 | 35520 | 35210 | 35450 | 35560 | 35210 | 33460 | 31860 | 30520 |
| 24 | 35290 | 35520 | 35400 | 35350 | 35520 | 35260 | 35560 | 35570 | 35160 | 33410 | 31830 | 30520 |
| 25 | 35280 | 35490 | 35400 | 35350 | 35500 | 35280 | 35560 | 35500 | 35120 | 33360 | 31770 | 30500 |
| 26 | 35250 | 35470 | 35400 | 35330 | 35520 | 35330 | 35420 | 35520 | 35090 | 33310 | 31700 | 30470 |
| 27 | 35210 | 35470 | 35400 | 35330 | 35530 | 35430 | 35450 | 35500 | 35050 | 33240 | 31630 | 30460 |
| 28 | 35220 | 35470 | 35380 | 35350 | 35540 | 35400 | 35450 | 35630 | 34970 | 33170 | 31570 | 30430 |
| 29 | 35350 | 35470 | 35380 | 35350 | 35430 | 35430 | 35400 | 35700 | 34940 | 33140 | 31510 | 30430 |
| 30 | 35540 | 35470 | 35380 | 35330 | --- | 35420 | 35390 | 35690 | 34870 | 33070 | 31440 | 30410 |
| 31 | 35730 | --- | 35350 | 35330 | --- | 35260 | --- | 35670 | --- | 33000 | 31400 | --- |
| MAX | 36250 | 35770 | 35460 | 35380 | 35540 | 35460 | 35590 | 35700 | 35710 | 34810 | 32940 | 31340 |
| MIN | 35210 | 35470 | 35320 | 35260 | 35330 | 35210 | 35110 | 35070 | 34870 | 33000 | 31400 | 30410 |
| (†) | 2649.97 | 2649.79 | 2649.70 | 2649.69 | 2649.76 | 2649.64 | 2649.73 | 2649.93 | 2649.36 | 2648.01 | 2646.80 | 2646.03 |
| (‡) | -570 | -260 | -120 | -20 | +100 | -170 | +130 | +280 | -800 | -1870 | -1600 | -990 |
| (††) | 371 | 280 | 289 | 280 | 291 | 317 | 346 | 349 | 489 | 754 | 609 | 451 |

CAL YR 1979 MAX 38630 MIN 35210 ‡ -2090 †† 4291
WTR YR 1980 MAX 36250 MIN 30410 ‡ -5890 †† 4826

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal and industrial uses by Greenbelt Water Authority.

## 07299840 GREENBELT LAKE NEAR CLARENDON, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 04... | 1415 | 1910 | 5.0 | 240 | 82 | 49 | 28 | 330 | 9.3 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | |
| 04... | 7.8 | 190 | 0 | 300 | 350 | .8 | 5.6 | 1160 |

## 07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX

**LOCATION.**--Lat 34°57'27", long 100°13'14", Collingsworth County, Hydrologic Unit 11120202, near center of stream on downstream side of bridge on U.S. Highway 83, 4 mi (6 km) downstream from Fort Worth and Denver (Burlington) Railway Co. bridge, 4.5 mi (7.2 km) south of Lutie, and 7.2 mi (11.6 km) north of Wellington.

**DRAINAGE AREA.**--1,222 mi$^2$ (3,165 km$^2$), of which 209 mi$^2$ (541 km$^2$) probably is noncontributing.

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--June 1952 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 1,941.41 ft (591.742 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Water-discharge records fair. Several small diversions upstream from gage for irrigation. Some regulation for municipal use by Greenbelt Lake (station 07299840), capacity 59,100 acre-ft (72.9 hm$^3$), 42 mi (68 km) upstream.

**AVERAGE DISCHARGE.**--14 years (water years 1953-66) prior to completion of Greenbelt Lake, 72.6 ft$^3$/s (2.056 m$^3$/s), 52,600 acre-ft/yr (64.9 hm$^3$/yr); 14 years (water years 1967-80) regulated, 47.3 ft$^3$/s (1.340 m$^3$/s), 34,270 acre-ft/yr (42.3 hm$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 146,000 ft$^3$/s (4,130 m$^3$/s) May 16, 1957, gage height, 19.00 ft (5.791 m), from rating curve extended above 11,000 ft$^3$/s (312 m$^3$/s) on basis of slope-area measurement of 63,400 ft$^3$/s (1,800 m$^3$/s); minimum, 0.1 ft$^3$/s (0.003 m$^3$/s) June 19, 1952.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 6,050 ft$^3$/s (171 m$^3$/s) May 15 at 2200 hours, gage height, 6.99 ft (2.131 m); minimum, 0.33 ft$^3$/s (0.009 m$^3$/s) Sept. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10 | 17 | 13 | 25 | 17 | 20 | 25 | 98 | 157 | 32 | 2.2 | 2.5 |
| 2 | 8.7 | 11 | 13 | 28 | 20 | 22 | 23 | 113 | 114 | 20 | 2.0 | 2.5 |
| 3 | 7.8 | 9.2 | 15 | 29 | 33 | 21 | 34 | 60 | 70 | 8.7 | 1.8 | 2.0 |
| 4 | 7.2 | 9.7 | 16 | 28 | 42 | 20 | 26 | 27 | 30 | 7.1 | 1.4 | 1.0 |
| 5 | 8.3 | 11 | 18 | 26 | 40 | 22 | 20 | 26 | 20 | 5.6 | 1.8 | .85 |
| 6 | 8.9 | 9.5 | 16 | 30 | 27 | 25 | 17 | 26 | 17 | 5.6 | 1.6 | .72 |
| 7 | 8.7 | 10 | 16 | 26 | 22 | 23 | 14 | 24 | 17 | 8.7 | 1.1 | .88 |
| 8 | 9.0 | 14 | 16 | 24 | 20 | 22 | 12 | 24 | 12 | 10 | 1.4 | 1.4 |
| 9 | 7.4 | 17 | 16 | 23 | 18 | 21 | 12 | 26 | 18 | 6.3 | 1.4 | 2.1 |
| 10 | 7.9 | 16 | 16 | 27 | 18 | 20 | 13 | 24 | 17 | 11 | 1.1 | 6.1 |
| 11 | 8.4 | 16 | 17 | 30 | 25 | 29 | 12 | 20 | 541 | 8.7 | 1.6 | 4.8 |
| 12 | 8.7 | 18 | 14 | 26 | 41 | 59 | 11 | 14 | 389 | 6.3 | 2.2 | 15 |
| 13 | 7.9 | 16 | 13 | 28 | 32 | 50 | 12 | 12 | 125 | 6.3 | 2.8 | 7.6 |
| 14 | 7.9 | 17 | 13 | 28 | 31 | 32 | 12 | 14 | 42 | 7.1 | 4.4 | 3.7 |
| 15 | 10 | 17 | 14 | 29 | 29 | 23 | 12 | 2590 | 59 | 6.3 | 5.6 | 2.9 |
| 16 | 9.9 | 17 | 12 | 27 | 26 | 22 | 12 | 1570 | 40 | 5.0 | 3.2 | 2.4 |
| 17 | 10 | 17 | 15 | 26 | 24 | 15 | 11 | 451 | 43 | 5.6 | 2.2 | 1.7 |
| 18 | 11 | 17 | 18 | 25 | 24 | 15 | 11 | 279 | 50 | 5.6 | 2.2 | 2.1 |
| 19 | 11 | 15 | 18 | 28 | 30 | 17 | 12 | 102 | 51 | 5.0 | 3.6 | 1.7 |
| 20 | 8.8 | 24 | 23 | 40 | 37 | 14 | 12 | 76 | 233 | 4.0 | 4.4 | 1.2 |
| 21 | 7.8 | 21 | 24 | 50 | 24 | 17 | 12 | 330 | 185 | 8.7 | 3.6 | 1.1 |
| 22 | 6.2 | 14 | 23 | 39 | 21 | 17 | 12 | 427 | 98 | 6.3 | 2.0 | .71 |
| 23 | 6.8 | 15 | 21 | 32 | 19 | 27 | 14 | 173 | 112 | 3.6 | 1.4 | 1.3 |
| 24 | 7.5 | 17 | 22 | 27 | 20 | 26 | 682 | 80 | 60 | 3.6 | 1.6 | 1.9 |
| 25 | 7.7 | 18 | 20 | 27 | 22 | 25 | 133 | 64 | 54 | 2.8 | 1.8 | 1.9 |
| 26 | 7.9 | 17 | 21 | 25 | 21 | 15 | 75 | 36 | 39 | 2.5 | 2.8 | 4.2 |
| 27 | 8.0 | 16 | 21 | 20 | 22 | 26 | 52 | 353 | 37 | 4.4 | 4.0 | 12 |
| 28 | 8.3 | 14 | 24 | 18 | 25 | 208 | 26 | 1040 | 49 | 3.6 | 2.5 | 9.2 |
| 29 | 10 | 13 | 26 | 17 | 21 | 105 | 17 | 2340 | 59 | 2.8 | 2.5 | 6.1 |
| 30 | 120 | 15 | 26 | 16 | --- | 72 | 36 | 860 | 36 | 2.5 | 1.8 | 4.9 |
| 31 | 63 | --- | 25 | 16 | --- | 33 | --- | 213 | --- | 2.8 | 2.2 | --- |
| TOTAL | 430.7 | 458.4 | 565 | 840 | 751 | 1063 | 1372 | 11492 | 2774 | 218.5 | 74.2 | 106.46 |
| MEAN | 13.9 | 15.3 | 18.2 | 27.1 | 25.9 | 34.3 | 45.7 | 371 | 92.5 | 7.05 | 2.39 | 3.55 |
| MAX | 120 | 24 | 26 | 50 | 42 | 208 | 682 | 2590 | 541 | 32 | 5.6 | 15 |
| MIN | 6.2 | 9.2 | 12 | 16 | 17 | 14 | 11 | 12 | 12 | 2.5 | 1.1 | .71 |
| AC-FT | 854 | 909 | 1120 | 1670 | 1490 | 2110 | 2720 | 22790 | 5500 | 433 | 147 | 211 |

CAL YR 1979 TOTAL 20332.70 MEAN 55.7 MAX 2340 MIN 1.4 AC-FT 40330
WTR YR 1980 TOTAL 20145.26 MEAN 55.0 MAX 2590 MIN .71 AC-FT 39960

## 07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year. Chemical and biochemical analyses: October 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,190 micromhos May 11, 1970; minimum daily, 743 micromhos June 2, 1978.
WATER TEMPERATURES: Maximum daily, 39.0°C June 28, 1977; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,540 micromhos Feb. 1; minimum daily, 1,000 micromhos May 30.
WATER TEMPERATURES: Maximum daily, 38.0°C June 29; minimum daily, 0.0°C Dec. 17, Jan. 27, 29, Feb. 1, 16.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAMFLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>10... | 1445 | 8.0 | 3210 | 7.6 | 21.0 | 1700 | 1600 | 520 | 97 | 170 |
| JAN<br>03... | 1405 | 28 | 2930 | -- | 7.0 | 1400 | 1300 | 430 | 84 | 190 |
| MAR<br>31... | 0930 | 33 | 2840 | -- | 8.0 | 1300 | 1100 | 360 | 91 | 210 |
| APR<br>30... | 1700 | 36 | 2820 | -- | 20.0 | 1300 | 1200 | 400 | 81 | 190 |
| MAY<br>06... | 1425 | 28 | 2880 | 7.9 | 29.0 | 1300 | 1100 | 380 | 80 | 210 |
| JUN<br>10... | 1140 | 16 | 3040 | -- | 26.0 | 1600 | 1400 | 490 | 84 | 180 |
| JUL<br>22... | 1130 | 3.9 | 3030 | -- | 32.0 | 1700 | 1600 | 530 | 87 | 130 |
| AUG<br>31... | 0730 | 2.3 | 2970 | -- | 23.0 | 1700 | 1600 | 540 | 85 | 120 |
| SEP<br>30... | 1030 | 5.0 | 3090 | -- | 24.0 | 1700 | 1600 | 550 | 88 | 130 |

| DATE | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT<br>10... | 1.8 | 4.0 | 140 | 0 | 1600 | 230 | .3 | 21 | 2710 |
| JAN<br>03... | 2.2 | 4.2 | 170 | 0 | 1200 | 290 | .6 | 19 | 2300 |
| MAR<br>31... | 2.6 | 5.7 | 180 | 0 | 1100 | 310 | .7 | 18 | 2180 |
| APR<br>30... | 2.3 | 5.3 | 170 | 0 | 1200 | 280 | .5 | 15 | 2260 |
| MAY<br>06... | 2.6 | 6.0 | 160 | 0 | 1100 | 310 | .7 | 13 | 2180 |
| JUN<br>10... | 2.0 | 4.9 | 160 | 0 | 1400 | 290 | .6 | 13 | 2540 |
| JUL<br>22... | 1.4 | 4.2 | 140 | 0 | 1500 | 200 | .6 | 16 | 2540 |
| AUG<br>31... | 1.3 | 4.3 | 170 | 0 | 1500 | 190 | .6 | 24 | 2550 |
| SEP<br>30... | 1.4 | 4.2 | 170 | 0 | 1500 | 200 | .6 | 21 | 2580 |

## 07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 430.7 | 3040 | 2430 | 2820 | 270 | 309 | 1300 | 1520 | 1500 |
| NOV. | 1979 | 458.4 | 3260 | 2640 | 3270 | 280 | 347 | 1400 | 1760 | 1600 |
| DEC. | 1979 | 565 | 3200 | 2580 | 3930 | 280 | 422 | 1400 | 2120 | 1600 |
| JAN. | 1980 | 840 | 3050 | 2430 | 5520 | 270 | 606 | 1300 | 2980 | 1500 |
| FEB. | 1980 | 751 | 2940 | 2330 | 4710 | 260 | 528 | 1300 | 2550 | 1400 |
| MAR. | 1980 | 1063 | 2930 | 2310 | 6640 | 260 | 744 | 1300 | 3590 | 1400 |
| APR. | 1980 | 1372 | 2330 | 1770 | 6540 | 220 | 800 | 970 | 3580 | 1100 |
| MAY | 1980 | 11492 | 1810 | 1310 | 40700 | 180 | 5450 | 730 | 22500 | 800 |
| JUNE | 1980 | 2774 | 2570 | 1980 | 14800 | 230 | 1760 | 1100 | 8090 | 1200 |
| JULY | 1980 | 218.5 | 3060 | 2440 | 1440 | 270 | 158 | 1300 | 776 | 1500 |
| AUG. | 1980 | 74.2 | 3020 | 2390 | 480 | 270 | 53 | 1300 | 259 | 1500 |
| SEPT | 1980 | 106.46 | 3110 | 2490 | 716 | 270 | 78 | 1300 | 387 | 1500 |
| TOTAL |  | 20145.26 | ** | ** | 91600 | ** | 11300 | ** | 50200 | ** |
| WTD. AVG. |  | 55 | 2230 | 1680 | ** | 210 | ** | 920 | ** | 1000 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3200 | 2960 | 3190 | 3210 | 3540 | 3150 | 3080 | 2510 | 2390 | 3050 | 3010 | 2960 |
| 2 | 3230 | 3330 | 3210 | 3150 | 3190 | 3020 | 3010 | 2320 | 2470 | 3040 | 3020 | 3000 |
| 3 | 3220 | 3390 | 3190 | 3040 | 2750 | 3050 | 2920 | 2410 | 2570 | 3090 | 3000 | 3030 |
| 4 | 3200 | 3340 | 3200 | 3080 | 2490 | 3110 | 2980 | 2680 | 2590 | 3080 | 3020 | 3000 |
| 5 | 3220 | 3380 | 3230 | 3110 | 2750 | 3100 | 3030 | 2950 | 2500 | 3070 | 2980 | 3010 |
| 6 | 3250 | 3280 | 3220 | 2870 | 2880 | 3090 | 3060 | 3010 | 2760 | 3170 | 3010 | 3020 |
| 7 | 3280 | 3320 | 3190 | 2990 | 2930 | 3120 | 3100 | 3030 | 2920 | 3080 | 2990 | 3020 |
| 8 | 3250 | 3300 | 3170 | 3050 | 2980 | 3140 | 3260 | 3110 | 3070 | 3090 | 3020 | 3050 |
| 9 | 3320 | 3320 | 3220 | 3100 | 3020 | 3160 | 3150 | 3090 | 3060 | 3090 | 3010 | 3060 |
| 10 | 3210 | 3300 | 3230 | 3120 | 3000 | 3120 | 3060 | 3030 | 3040 | 3080 | 3030 | 3100 |
| 11 | 3250 | 3320 | 3260 | 3080 | 2600 | 3070 | 3200 | 3170 | 2440 | 3080 | 3040 | 3160 |
| 12 | 3290 | 3280 | 3180 | 3040 | 2860 | 2810 | 3030 | 3260 | 1900 | 3060 | 3010 | 3090 |
| 13 | 3280 | 3300 | 3130 | 3090 | 2930 | 2900 | 3170 | 3110 | 2620 | 3050 | 3040 | 3200 |
| 14 | 3340 | 3310 | 3200 | 3100 | 2920 | 3100 | 3060 | 3090 | 2820 | 3070 | 3020 | 3140 |
| 15 | 3300 | 3320 | 3240 | 3110 | 2950 | 3070 | 3090 | 1530 | 3020 | 3060 | 3090 | 3100 |
| 16 | 3310 | 3240 | 3280 | 3060 | 2980 | 3080 | 3040 | 1560 | 3050 | 3120 | 3030 | 3120 |
| 17 | 3320 | 3250 | 3530 | 3070 | 3100 | 3170 | 3210 | 2240 | 3000 | 3030 | 3010 | 3100 |
| 18 | 3310 | 3270 | 3060 | 3080 | 3170 | 3110 | 3080 | 2520 | 3130 | 3060 | 3000 | 3060 |
| 19 | 3370 | 3220 | 3120 | 3050 | 2830 | 3170 | 3140 | 2650 | 2940 | 3070 | 3010 | 3080 |
| 20 | 3340 | 3180 | 3340 | 2860 | 2840 | 3120 | 3040 | 2680 | 2450 | 3110 | 3020 | 3120 |
| 21 | 3280 | 3260 | 3130 | 2750 | 3030 | 3120 | 3090 | 2150 | 2590 | 2960 | 3000 | 3140 |
| 22 | 3460 | 3340 | 3120 | 2900 | 3120 | 3010 | 3130 | 2320 | 2860 | 3090 | 3050 | 3170 |
| 23 | 3390 | 3290 | 3190 | 2980 | 2950 | 3240 | 3190 | 2600 | 3000 | 3020 | 2960 | 3120 |
| 24 | 3420 | 3270 | 3080 | 3020 | 3000 | 3260 | 1900 | 2870 | 3050 | 3010 | 2990 | 3110 |
| 25 | 3440 | 3300 | 3150 | 3060 | 3030 | 3310 | 2020 | 2990 | 3090 | 3020 | 3000 | 3110 |
| 26 | 3450 | 3240 | 3230 | 3050 | 3100 | 3170 | 2540 | 3090 | 3100 | 2950 | 3010 | 3120 |
| 27 | 3400 | 3260 | 3200 | 3020 | 3180 | 2960 | 2730 | 1860 | 3060 | 2880 | 2990 | 3130 |
| 28 | 3380 | 3310 | 3210 | 3280 | 3140 | 2620 | 2760 | 1950 | 3110 | 3010 | 2980 | 3190 |
| 29 | 3320 | 3090 | 3180 | 3530 | 3120 | 2750 | 2910 | 1790 | 3100 | 3000 | 3000 | 3130 |
| 30 | 2750 | 3140 | 3160 | 3410 | --- | 2800 | 2840 | 1000 | 3110 | 3050 | 3030 | 3110 |
| 31 | 2540 | --- | 3240 | 3300 | --- | 2860 | --- | 2030 | --- | 3040 | 2980 | --- |
| MEAN | 3270 | 3270 | 3200 | 3080 | 2980 | 3060 | 2960 | 2540 | 2830 | 3050 | 3010 | 3090 |

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19.0 | 8.0 | 10.0 | 4.0 | .0 | --- | 20.0 | 16.0 | 30.0 | 29.0 | 24.0 | --- |
| 2 | 26.0 | 11.0 | 10.0 | 10.0 | 4.0 | 4.0 | 10.0 | 20.0 | 25.0 | 25.0 | 37.0 | 27.0 |
| 3 | 15.0 | 17.0 | 12.0 | 6.0 | --- | 10.0 | 12.0 | 7.0 | 32.0 | 26.0 | --- | 32.0 |
| 4 | 13.0 | 13.0 | --- | 7.0 | 8.0 | 10.0 | 22.0 | --- | 26.0 | --- | 36.0 | 33.0 |
| 5 | 14.0 | 16.0 | 7.0 | 5.0 | 13.0 | 5.0 | 13.0 | 28.0 | 24.0 | 25.0 | 25.0 | 22.0 |
| 6 | 15.0 | 10.0 | 10.0 | 8.0 | 10.0 | 18.0 | --- | 30.0 | 30.0 | 35.0 | 25.0 | 23.0 |
| 7 | 18.0 | 10.0 | 12.0 | 5.0 | --- | 12.0 | 15.0 | 28.0 | 25.0 | 28.0 | 33.0 | 29.0 |
| 8 | 22.0 | --- | 10.0 | 7.0 | --- | 8.0 | 20.0 | 25.0 | 27.0 | 27.0 | 25.0 | 23.0 |
| 9 | 17.0 | 11.0 | 10.0 | --- | 5.0 | 21.0 | 14.0 | 25.0 | 30.0 | 26.0 | 31.0 | 24.0 |
| 10 | 23.0 | 9.0 | 8.0 | 9.0 | 12.0 | 20.0 | 16.0 | 19.0 | 23.0 | 27.0 | 34.0 | 20.0 |
| 11 | 29.0 | 10.0 | 7.0 | 6.0 | 10.0 | 21.0 | 17.0 | 28.0 | 29.0 | 27.0 | 25.0 | 23.0 |
| 12 | 23.0 | --- | 3.0 | 5.0 | 11.0 | 10.0 | 12.0 | 25.0 | 31.0 | 27.0 | 22.0 | 24.0 |
| 13 | 20.0 | 15.0 | 3.0 | 11.0 | 14.0 | 10.0 | 14.0 | 13.0 | 33.0 | 27.0 | 28.0 | 26.0 |
| 14 | --- | 16.0 | 10.0 | 14.0 | 12.0 | 20.0 | 11.0 | 15.0 | 28.0 | 30.0 | 25.0 | 28.0 |
| 15 | 27.0 | 18.0 | 11.0 | 12.0 | 6.0 | 17.0 | 25.0 | 15.0 | 36.0 | 31.0 | 24.0 | 22.0 |
| 16 | 28.0 | 18.0 | --- | 14.0 | .0 | 15.0 | 18.0 | 15.0 | 32.0 | 35.0 | 28.0 | --- |
| 17 | 24.0 | 18.0 | .0 | 15.0 | 7.0 | 9.0 | 20.0 | 19.0 | 24.0 | 25.0 | 25.0 | 18.0 |
| 18 | 25.0 | 20.0 | 10.0 | 10.0 | 6.0 | 8.0 | 19.0 | 25.0 | 35.0 | 26.0 | 27.0 | 24.0 |
| 19 | 24.0 | 19.0 | 6.0 | 10.0 | 13.0 | 10.0 | 28.0 | 28.0 | 24.0 | 27.0 | 26.0 | 27.0 |
| 20 | 18.0 | 20.0 | 8.0 | --- | 11.0 | 17.0 | 20.0 | 23.0 | 36.0 | 33.0 | 26.0 | 23.0 |
| 21 | 21.0 | --- | 10.0 | 17.0 | 15.0 | 18.0 | 17.0 | 18.0 | 35.0 | 22.0 | 24.0 | 21.0 |
| 22 | 12.0 | --- | 9.0 | 17.0 | 18.0 | 14.0 | 14.0 | 27.0 | 25.0 | 35.0 | 35.0 | 18.0 |
| 23 | 21.0 | 14.0 | 10.0 | 6.0 | 17.0 | --- | 27.0 | 27.0 | 37.0 | 24.0 | 32.0 | 17.0 |
| 24 | 12.0 | 15.0 | 12.0 | 8.0 | --- | 18.0 | 15.0 | 31.0 | 37.0 | 22.0 | 28.0 | 19.0 |
| 25 | 10.0 | 11.0 | --- | 9.0 | 5.0 | 7.0 | 15.0 | 34.0 | 36.0 | 25.0 | 34.0 | 18.0 |
| 26 | 22.0 | 7.0 | 10.0 | 7.0 | 18.0 | 22.0 | 12.0 | 30.0 | 34.0 | 27.0 | 28.0 | 12.0 |
| 27 | 14.0 | 7.0 | 11.0 | .0 | 22.0 | 15.0 | 20.0 | 24.0 | 31.0 | 23.0 | 23.0 | 15.0 |
| 28 | 14.0 | --- | 8.0 | --- | 18.0 | 17.0 | 15.0 | 20.0 | 34.0 | 24.0 | 32.0 | 15.0 |
| 29 | 25.0 | 3.0 | 10.0 | .0 | 5.0 | 7.0 | 28.0 | 22.0 | 38.0 | 24.0 | 33.0 | 13.0 |
| 30 | 12.0 | 10.0 | 7.0 | --- | --- | --- | 20.0 | 20.0 | 36.0 | 27.0 | 30.0 | 21.0 |
| 31 | 10.0 | --- | 3.0 | 2.0 | --- | 8.0 | --- | 22.0 | --- | 25.0 | 23.0 | --- |
| MEAN | 19.0 | 13.0 | 8.5 | 8.5 | 10.5 | 13.5 | 17.5 | 22.5 | 31.0 | 27.0 | 28.0 | 22.0 |

## 07300500 SALT FORK RED RIVER AT MANGUM, OK

LOCATION.--Lat 34°51'32", long 99°30'28", in SW1/4SE1/4 sec.34, T.5 N., R.22 W., Greer County, Hydrologic Unit 11120202, near left bank on downstream side of pier of bridge on State Highway 34, 0.5 mi (0.8 km) south of Mangum, 13.0 mi (20.9 km) downstream from Fish Creek, and 35.5 mi (57.1 km) upstream from mouth.

DRAINAGE AREA.--1,566 $mi^2$ (4,056 $km^2$), of which 209 $mi^2$ (541 $km^2$) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1905 to June 1906, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1938.

GAGE.--Water-stage recorder. Datum of gage is 1,490.87 ft (454.417 m) National Geodetic Vertical Datum of 1929 (levels by Water and Power Resources Services). Apr. 11, 1905, to June 30, 1906, nonrecording gage at site 0.2 mi (0.3 km) upstream at different datum. Oct. 1, 1937, to Nov. 8, 1938, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records fair.

AVERAGE DISCHARGE.--43 years (water years 1937-80), 87.7 $ft^3/s$ (2.484 $m^3/s$), 63,540 acre-ft/yr (78.3 $hm^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 72,000 $ft^3/s$ (2,040 $m^3/s$) May 16, 1957, gage height, 14.55 ft (4.435 m); maximum gage height, 14.7 ft (4.48 m) June 16, 1938; no flow at times each year except 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 30,000 $ft^3/s$ (850 $m^3/s$) May 29, gage height, 12.82 ft (3.908 m), no other peak above base of 6,000 $ft^3/s$ (170 $m^3/s$); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | 39 | 10 | 23 | 16 | 12 | 44 | 42 | 502 | 3.4 | .00 | .00 |
| 2 | .00 | 25 | 11 | 23 | 18 | 9.6 | 34 | 55 | 250 | 2.7 | .00 | .00 |
| 3 | .00 | 19 | 13 | 23 | 26 | 13 | 36 | 65 | 170 | 2.3 | .00 | .00 |
| 4 | .00 | 14 | 15 | 23 | 37 | 21 | 32 | 72 | 123 | 2.3 | .00 | .00 |
| 5 | .00 | 11 | 15 | 25 | 37 | 26 | 27 | 53 | 98 | 1.9 | .00 | .00 |
| 6 | .00 | 10 | 14 | 26 | 36 | 24 | 24 | 46 | 78 | 1.7 | .00 | .00 |
| 7 | .00 | 9.2 | 14 | 24 | 34 | 21 | 20 | 40 | 63 | 1.6 | .00 | .00 |
| 8 | .00 | 9.6 | 13 | 26 | 36 | 22 | 16 | 33 | 51 | 1.4 | .00 | .00 |
| 9 | .00 | 11 | 13 | 25 | 28 | 21 | 13 | 28 | 45 | 1.2 | .00 | .00 |
| 10 | .00 | 11 | 14 | 26 | 29 | 20 | 12 | 27 | 45 | .89 | .00 | .00 |
| 11 | .00 | 11 | 15 | 24 | 45 | 21 | 10 | 25 | 42 | .59 | .00 | .00 |
| 12 | .00 | 12 | 15 | 23 | 46 | 28 | 9.2 | 22 | 43 | .46 | .00 | .00 |
| 13 | .00 | 12 | 16 | 23 | 46 | 28 | 9.0 | 17 | 81 | .31 | .00 | .00 |
| 14 | .00 | 12 | 15 | 25 | 41 | 31 | 8.2 | 15 | 56 | .15 | .00 | .00 |
| 15 | .00 | 12 | 16 | 25 | 35 | 32 | 7.7 | 1930 | 38 | .04 | .00 | .00 |
| 16 | .00 | 12 | 16 | 25 | 29 | 29 | 7.9 | 2260 | 30 | .00 | .00 | .00 |
| 17 | .00 | 13 | 12 | 25 | 24 | 25 | 8.1 | 255 | 30 | .00 | .00 | .00 |
| 18 | .00 | 13 | 8.4 | 26 | 28 | 21 | 7.6 | 84 | 20 | .00 | .00 | .00 |
| 19 | .00 | 13 | 12 | 35 | 34 | 19 | 7.7 | 58 | 20 | .00 | .00 | .00 |
| 20 | .00 | 18 | 26 | 50 | 31 | 17 | 7.0 | 58 | 24 | .00 | .00 | .00 |
| 21 | .00 | 16 | 27 | 42 | 33 | 15 | 6.4 | 54 | 57 | .00 | .00 | .00 |
| 22 | .00 | 13 | 24 | 45 | 33 | 15 | 6.3 | 50 | 39 | .00 | .00 | .00 |
| 23 | .00 | 13 | 24 | 42 | 27 | 22 | 6.2 | 43 | 29 | .00 | .00 | .00 |
| 24 | .00 | 13 | 23 | 34 | 24 | 21 | 109 | 33 | 20 | .00 | .00 | .00 |
| 25 | .00 | 13 | 21 | 28 | 22 | 21 | 520 | 26 | 16 | .00 | .00 | .00 |
| 26 | .00 | 13 | 21 | 24 | 21 | 22 | 100 | 23 | 10 | .00 | .00 | .00 |
| 27 | .00 | 13 | 20 | 18 | 21 | 25 | 72 | 255 | 7.3 | .00 | .00 | .00 |
| 28 | .00 | 13 | 22 | 18 | 21 | 35 | 57 | 78 | 5.6 | .00 | .00 | .00 |
| 29 | .00 | 8.4 | 21 | 24 | 20 | 92 | 44 | 3990 | 4.7 | .00 | .00 | .00 |
| 30 | 2.5 | 9.2 | 22 | 24 | --- | 72 | 39 | 8440 | 3.9 | .00 | .00 | .00 |
| 31 | 28 | --- | 22 | 16 | --- | 59 | --- | 1240 | --- | .00 | .00 | --- |
| TOTAL | 30.50 | 411.4 | 530.4 | 840 | 878 | 839.6 | 1300.3 | 19417 | 2001.5 | 20.94 | .00 | .00 |
| MEAN | .98 | 13.7 | 17.1 | 27.1 | 30.3 | 27.1 | 43.3 | 626 | 66.7 | .68 | .000 | .000 |
| MAX | 28 | 39 | 27 | 50 | 46 | 92 | 520 | 8440 | 502 | 3.4 | .00 | .00 |
| MIN | .00 | 8.4 | 8.4 | 16 | 16 | 9.6 | 6.2 | 15 | 3.9 | .00 | .00 | .00 |
| AC-FT | 60 | 816 | 1050 | 1670 | 1740 | 1670 | 2580 | 38510 | 3970 | 42 | .00 | .00 |

CAL YR 1979 TOTAL 16513.06 MEAN 45.2 MAX 1930 MIN .00 AC-FT 32750
WTR YR 1980 TOTAL 26269.64 MEAN 71.8 MAX 8440 MIN .00 AC-FT 52110

## 07300500 SALT FORK RED RIVER AT MANGUM, OK--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1976 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN DEMAND, CHEMICAL (LOW LEVEL) (MG/L) | SULFATE DISSOLVED (MG/L AS SO4) | SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | | |
| 03... | 1220 | 1200 | 7.5 | 21.0 | 6.9 | 17 | 590 | 6 | <.50 | 1.5 | .060 |

## 07301200 MCCLELLAN CREEK NEAR MCLEAN, TX

**LOCATION.**--Lat 35°19'45", long 100°36'32", Gray County, Hydrologic Unit 11120301, on left bank at downstream side of bridge on State Highway 273, 5 mi (8 km) upstream from mouth, and 6.9 mi (11.1 km) north of McLean.

**DRAINAGE AREA.**--759 $mi^2$ (1,966 $km^2$), of which 299 $mi^2$ (774 $km^2$) probably is noncontributing.

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--Occasional low-flow measurements, 1965-67, October 1967 to September 1980 (discontinued).

**REVISED RECORDS.**--WDR TX-75-1: 1968-70, 1972, 1973(M), 1974.

**GAGE.**--Water-stage recorder. Datum of gage is 2,545.99 ft (776.018 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Water-discharge records poor. Flow is largely regulated by Lake McClellan, capacity 5,000 acre-ft (6.16 $hm^3$), 18 mi (29 km) upstream. One small diversion from Lake McClellan. Flow is affected at times by discharge from flood-detention pool of a floodwater-retarding structure with detention capacity of 2,930 acre-ft (3.61 $hm^3$). These structures control runoff from 17.0 $mi^2$ (44.0 $km^2$).

**AVERAGE DISCHARGE.**--13 years, 20.1 $ft^3/s$ (0.569 $m^3/s$), 14,560 acre-ft/yr (18.0 $hm^3/yr$).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 26,600 $ft^3/s$ (753 $m^3/s$) May 29, 1975, gage height, 14.55 ft (4.435 m), from rating curve extended above 1,100 $ft^3/s$ (31.2 $m^3/s$) on basis of contracted-opening measurement of peak stage; no flow at times.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since 1912, 21 ft (6.4 m) in May 1957, from information by local residents. Other major floods occurred in 1920, 1941, and 1951, stage unknown.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 1,180 $ft^3/s$ (33.4 $m^3/s$) Oct. 30, gage height, 8.07 ft (2.460 m); no flow June 25 to Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .07 | 3.4 | 9.0 | 13 | 15 | 5.0 | 14 | 12 | 12 | .00 | .00 | .00 |
| 2 | .04 | 2.1 | 9.0 | 9.1 | 20 | 4.0 | 14 | 8.0 | 10 | .00 | .00 | .00 |
| 3 | .01 | 2.7 | 9.2 | 11 | 27 | 6.0 | 20 | 6.9 | 8.1 | .00 | .00 | .00 |
| 4 | .03 | 4.1 | 9.6 | 6.6 | 30 | 10 | 14 | 8.0 | 9.0 | .00 | .00 | .00 |
| 5 | .15 | 4.1 | 9.0 | 8.6 | 32 | 4.1 | 10 | 10 | 13 | .00 | .00 | .00 |
| 6 | .20 | 2.1 | 8.8 | 11 | 29 | 4.1 | 8.0 | 5.3 | 7.4 | .00 | .00 | .00 |
| 7 | .17 | 3.4 | 8.7 | 10 | 31 | 6.9 | 8.0 | 4.4 | 4.7 | .00 | .00 | .00 |
| 8 | .13 | 5.0 | 8.5 | 9.0 | 20 | 6.9 | 8.0 | 3.7 | 7.5 | .00 | .00 | .00 |
| 9 | .10 | 8.0 | 9.6 | 10 | 15 | 8.0 | 6.9 | 3.7 | 10 | .00 | .00 | .00 |
| 10 | .13 | 5.9 | 9.8 | 11 | 17 | 8.0 | 5.0 | 3.3 | 9.5 | .00 | .00 | .00 |
| 11 | .20 | 5.0 | 9.2 | 13 | 18 | 8.0 | 5.0 | 3.5 | 114 | .00 | .00 | .00 |
| 12 | .29 | 4.1 | 8.0 | 13 | 19 | 14 | 5.9 | 3.1 | 28 | .00 | .00 | .00 |
| 13 | .20 | 4.1 | 9.0 | 12 | 20 | 6.9 | 10 | 3.1 | 10 | .00 | .00 | .00 |
| 14 | .40 | 3.4 | 14 | 12 | 16 | 5.9 | 10 | 4.0 | 4.5 | .00 | .00 | .00 |
| 15 | 1.0 | 5.9 | 14 | 11 | 14 | 6.9 | 6.9 | 49 | 2.6 | .00 | .00 | .00 |
| 16 | 1.0 | 8.0 | 10 | 8.7 | 8.0 | 5.0 | 6.9 | 14 | 2.1 | .00 | .00 | .00 |
| 17 | 1.3 | 10 | 9.0 | 10 | 8.0 | 5.0 | 8.0 | 9.2 | 1.3 | .00 | .00 | .00 |
| 18 | .52 | 12 | 9.0 | 10 | 9.2 | 5.0 | 6.9 | 13 | 2.7 | .00 | .00 | .00 |
| 19 | 4.1 | 12 | 10 | 10 | 10 | 4.1 | 5.9 | 8.3 | 4.1 | .00 | .00 | .00 |
| 20 | 1.6 | 12 | 10 | 14 | 16 | 6.9 | 5.9 | 10 | 5.0 | .00 | .00 | .00 |
| 21 | 1.0 | 9.2 | 12 | 11 | 14 | 5.9 | 3.4 | 13 | 2.7 | .00 | .00 | .00 |
| 22 | 1.6 | 12 | 11 | 10 | 8.0 | 5.0 | 3.4 | 12 | 1.6 | .00 | .00 | .00 |
| 23 | 4.1 | 10 | 11 | 11 | 8.0 | 9.2 | 3.4 | 9.3 | .52 | .00 | .00 | .00 |
| 24 | 2.7 | 11 | 12 | 8.9 | 12 | 12 | 12 | 8.6 | .13 | .00 | .00 | .00 |
| 25 | 3.4 | 13 | 14 | 11 | 12 | 14 | 10 | 9.4 | .00 | .00 | .00 | .00 |
| 26 | 2.7 | 13 | 17 | 10 | 8.0 | 20 | 8.0 | 11 | .00 | .00 | .00 | .00 |
| 27 | 2.7 | 13 | 16 | 9.0 | 9.2 | 24 | 5.0 | 14 | .00 | .00 | .00 | .00 |
| 28 | 2.7 | 12 | 16 | 8.0 | 12 | 13 | 5.0 | 20 | .00 | .00 | .00 | .00 |
| 29 | 2.7 | 11 | 14 | 7.0 | 10 | 12 | 4.1 | 16 | .00 | .00 | .00 | .00 |
| 30 | 304 | 10 | 14 | 8.0 | --- | 12 | 6.9 | 11 | .00 | .00 | .00 | .00 |
| 31 | 9.8 | --- | 11 | 10 | --- | 13 | --- | 12 | --- | .00 | .00 | --- |
| TOTAL | 349.04 | 231.5 | 341.4 | 316.9 | 467.4 | 270.8 | 240.5 | 318.8 | 270.45 | .00 | .00 | .00 |
| MEAN | 11.3 | 7.72 | 11.0 | 10.2 | 16.1 | 8.74 | 8.02 | 10.3 | 9.02 | .000 | .000 | .000 |
| MAX | 304 | 13 | 17 | 14 | 32 | 24 | 20 | 49 | 114 | .00 | .00 | .00 |
| MIN | .01 | 2.1 | 8.0 | 6.6 | 8.0 | 4.0 | 3.4 | 3.1 | .00 | .00 | .00 | .00 |
| AC-FT | 692 | 459 | 677 | 629 | 927 | 537 | 477 | 632 | 536 | .00 | .00 | .00 |

CAL YR 1979 TOTAL 6557.18 MEAN 18.0 MAX 586 MIN .01 AC-FT 13010
WTR YR 1980 TOTAL 2806.79 MEAN 7.67 MAX 304 MIN .00 AC-FT 5570

## 07301200 MCCLELLAN CREEK NEAR MCLEAN, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1964 to September 1980 (discontinued).

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|
| OCT<br>10... | 1115 | .14 | 1160 | 12.0 | 240 | 63 | 68 | 18 | 150 |
| NOV<br>19... | 1400 | 12 | 1150 | -- | 280 | 92 | 76 | 22 | 140 |
| JAN<br>03... | 0950 | 11 | 1080 | 2.0 | 270 | 80 | 73 | 21 | 130 |
| FEB<br>13... | 1200 | 14 | 1070 | 10.0 | 280 | 75 | 81 | 19 | 120 |
| MAR<br>24... | 1700 | 11 | 1060 | 15.0 | 250 | 77 | 67 | 20 | 120 |
| MAY<br>06... | 1045 | 7.9 | 1110 | 21.0 | 250 | 72 | 68 | 20 | 130 |
| JUN<br>16... | 1405 | 3.2 | 1160 | 30.0 | 250 | 91 | 66 | 20 | 140 |

| DATE | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT<br>10... | 4.2 | 2.6 | 220 | 0 | 91 | 210 | .6 | 24 | 673 |
| NOV<br>19... | 3.6 | 3.7 | 230 | 0 | 140 | 180 | .7 | 23 | 699 |
| JAN<br>03... | 3.5 | 3.1 | 230 | 0 | 120 | 160 | .7 | 21 | 642 |
| FEB<br>13... | 3.1 | 3.1 | 250 | 0 | 130 | 150 | .6 | 21 | 648 |
| MAR<br>24... | 3.3 | 3.5 | 210 | 0 | 130 | 160 | .6 | 21 | 626 |
| MAY<br>06... | 3.6 | 4.0 | 220 | 0 | 130 | 170 | 1.1 | 20 | 652 |
| JUN<br>16... | 3.9 | 4.9 | 190 | 0 | 160 | 220 | .7 | 22 | 727 |

## 07301300 NORTH FORK RED RIVER NEAR SHAMROCK, TX

LOCATION.--Lat 35°15'51", long 100°14'29", Wheeler County, Hydrologic Unit 11120302, on left bank at downstream side of bridge on U.S. Highway 83, 2.5 mi (4.0 km) north of Shamrock, 16 mi (26 km) upstream from Texas-Oklahoma State line, and 23 mi (37 km) downstream from McClellan Creek.

DRAINAGE AREA.--1,082 mi$^2$ (2,802 km$^2$), of which 379 mi$^2$ (982 km$^2$) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1951-63 (occasional low-flow measurements), February 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,165.55 ft (660.060 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records poor. Some regulation by Lake McClellan, capacity 5,000 acre-ft (6.16 hm$^3$), 41 mi (66 km) upstream. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 07301200. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--16 years, 32.4 ft$^3$/s (0.918 m$^3$/s), 23,470 acre-ft/yr (28.9 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,400 ft$^3$/s (578 m$^3$/s) May 29, 1975, gage height, 7.47 ft (2.277 m), from rating curve extended above 3,800 ft$^3$/s (108 m$^3$/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1915, 16.1 ft (4.91 m) in May 1957, from information by State Department of Highways and Public Transportation and by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,440 ft$^3$/s (40.8 m$^3$/s) May 15 at 2400 hours, gage height, 3.60 ft (1.097 m), no peak above base of 3,000 ft$^3$/s (85.0 m$^3$/s); no flow for many days

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | 209 | .53 | 15 | 73 | 4.2 | 7.7 | 68 | .00 | .00 | .00 | .00 |
| 2 | .00 | 154 | .34 | 17 | 81 | 4.9 | 8.9 | 43 | .00 | .00 | .00 | .00 |
| 3 | .00 | 66 | .53 | 17 | 60 | 5.7 | 5.7 | 31 | .00 | .00 | .00 | .00 |
| 4 | .00 | 31 | 15 | 15 | 116 | 5.7 | 2.5 | 8.9 | .00 | .00 | .00 | .00 |
| 5 | .00 | 25 | 12 | 17 | 48 | 6.7 | 1.8 | 1.2 | .00 | .00 | .00 | .00 |
| 6 | .00 | 13 | 7.7 | 22 | 31 | 6.7 | 1.0 | 4.2 | .00 | .00 | .00 | .00 |
| 7 | .00 | 10 | 4.2 | 25 | 25 | 4.9 | .42 | 1.2 | .00 | .00 | .00 | .00 |
| 8 | .00 | 13 | 3.0 | 22 | 24 | 4.2 | .34 | 1.8 | .00 | .00 | .00 | .00 |
| 9 | .00 | 73 | 3.0 | 20 | 25 | 3.6 | .16 | 1.0 | .00 | .00 | .00 | .00 |
| 10 | .00 | 60 | 3.6 | 15 | 39 | 2.1 | .09 | .50 | .00 | .00 | .00 | .00 |
| 11 | .00 | 73 | 6.7 | 12 | 54 | 1.8 | .02 | .25 | .00 | .00 | .00 | .00 |
| 12 | .00 | 73 | 6.7 | 17 | 35 | 1.5 | .00 | .10 | .00 | .00 | .00 | .00 |
| 13 | .00 | 66 | 6.7 | 15 | 25 | 1.0 | .00 | .00 | .00 | .00 | .00 | .00 |
| 14 | .00 | 43 | 6.7 | 13 | 20 | .67 | .00 | .00 | .00 | .00 | .00 | .00 |
| 15 | .00 | 25 | 6.7 | 54 | 17 | .53 | .00 | 270 | .00 | .00 | .00 | .00 |
| 16 | .00 | 20 | 10 | 48 | 22 | .34 | .00 | 448 | .00 | .00 | .00 | .00 |
| 17 | .00 | 17 | 10 | 43 | 13 | .26 | .00 | 81 | .00 | .00 | .00 | .00 |
| 18 | .00 | 12 | 10 | 54 | 17 | .20 | .00 | 31 | .00 | .00 | .00 | .00 |
| 19 | .00 | 7.7 | 10 | 48 | 8.9 | .20 | .00 | 7.7 | .00 | .00 | .00 | .00 |
| 20 | .00 | 57 | 10 | 124 | 3.6 | .03 | .00 | 5.7 | .00 | .00 | .00 | .00 |
| 21 | .00 | 2.5 | 12 | 81 | 1.2 | .00 | .00 | 194 | .00 | .00 | .00 | .00 |
| 22 | .00 | .67 | 13 | 60 | .26 | .00 | .00 | 55 | .00 | .00 | .00 | .00 |
| 23 | .00 | .42 | 17 | 35 | .34 | 1.8 | .00 | 4.9 | .00 | .00 | .00 | .00 |
| 24 | .00 | .34 | 15 | 22 | .34 | 8.9 | 220 | 1.0 | .00 | .00 | .00 | .00 |
| 25 | .00 | .53 | 13 | 25 | .34 | 3.0 | 129 | .34 | .00 | .00 | .00 | .00 |
| 26 | .00 | 1.5 | 13 | 28 | .20 | 4.2 | 100 | .16 | .00 | .00 | .00 | .00 |
| 27 | .00 | 2.5 | 17 | 25 | 15 | 2.5 | 54 | .00 | .00 | .00 | .00 | .00 |
| 28 | .00 | 1.5 | 17 | 48 | 20 | 6.7 | 98 | .00 | .00 | .00 | .00 | .00 |
| 29 | .00 | 1.5 | 17 | 39 | 4.2 | 4.2 | 66 | .00 | .00 | .00 | .00 | .00 |
| 30 | 493 | 1.0 | 15 | 54 | --- | 10 | 286 | .00 | .00 | .00 | .00 | .00 |
| 31 | 291 | --- | 17 | 81 | --- | 7.7 | --- | .00 | --- | .00 | .00 | --- |
| TOTAL | 784.00 | 1060.16 | 299.40 | 1111 | 779.38 | 104.23 | 981.63 | 1259.95 | .00 | .00 | .00 | .00 |
| MEAN | 25.3 | 35.3 | 9.66 | 35.8 | 26.9 | 3.36 | 32.7 | 40.6 | .000 | .000 | .000 | .000 |
| MAX | 493 | 209 | 17 | 124 | 116 | 10 | 286 | 448 | .00 | .00 | .00 | .00 |
| MIN | .00 | .34 | .34 | 12 | .20 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| AC-FT | 1560 | 2100 | 594 | 2200 | 1550 | 207 | 1950 | 2500 | .00 | .00 | .00 | .00 |

CAL YR 1979 TOTAL 9625.20 MEAN 26.4 MAX 822 MIN .00 AC-FT 19090
WTR YR 1980 TOTAL 6379.75 MEAN 17.4 MAX 493 MIN .00 AC-FT 12650

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1964 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICRO-MHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|
| NOV 20... | 1015 | 14 | 2230 | 13.0 | 810 | 720 | 250 | 46 | 180 |
| JAN 03... | 1600 | 17 | 2380 | 6.0 | 710 | 570 | 210 | 44 | 230 |
| FEB 07... | 0930 | 18 | 2500 | 2.0 | 800 | 670 | 240 | 49 | 230 |
| MAY 02... | 1630 | 42 | 2760 | 21.0 | 760 | 630 | 220 | 50 | 280 |

| DATE | SODIUM AD-SORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| NOV 20... | 2.7 | 5.3 | 120 | 0 | 640 | 330 | .4 | 18 | 1530 |
| JAN 03... | 3.8 | 4.7 | 160 | 0 | 470 | 450 | .6 | 25 | 1510 |
| FEB 07... | 3.5 | 4.8 | 160 | 0 | 500 | 460 | .5 | 19 | 1580 |
| MAY 02... | 4.4 | 7.3 | 150 | 0 | 440 | 590 | 1.0 | 14 | 1680 |

## 07301410 SWEETWATER CREEK NEAR KELTON, TX

LOCATION.--Lat 35°28'23", long 100°07'14", Wheeler County, Hydrologic Unit 11120302, near center of stream on downstream side of bridge on Farm Road 592, 5 mi (8 km) north of Kelton, 8 mi (13 km) upstream from Texas-Oklahoma State line, and 8.5 mi (13.7 km) northeast of Wheeler.

DRAINAGE AREA.--287 mi² (743 km²), of which 20 mi² (50 km²) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,230 ft (680 m), from topographic map.

REMARKS.--Water-discharge records fair except those for periods of no gage-height record, June 13 to Sept. 2, which are poor. Diversion above station for ranch use.

AVERAGE DISCHARGE.--18 years (water years 1963-80), 13.9 ft³/s (0.394 m³/s), 0.71 in/yr (18 mm/yr), 10,070 acre-ft/yr (12.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,890 ft³/s (81.8 m³/s) May 20, 1977, gage height, 15.73 ft (4.795 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, about 20 ft (6.1 m) May 16, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 225 ft³/s (6.37 m³/s) Oct. 30, gage height, 9.64 ft (2.938 m), no peak above base of 500 ft³/s (14.2 m³/s); minimum daily, 0.01 ft³/s (0.0003 m³/s) Aug. 31 to Sept. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .42 | 19 | 7.5 | 11 | 12 | 11 | 19 | 27 | 17 | 1.6 | .15 | .01 |
| 2 | .37 | 14 | 8.0 | 11 | 13 | 10 | 17 | 28 | 15 | 1.4 | .14 | .01 |
| 3 | .37 | 12 | 8.9 | 11 | 14 | 10 | 18 | 23 | 14 | 1.3 | .13 | .04 |
| 4 | .39 | 10 | 9.0 | 11 | 14 | 11 | 18 | 20 | 13 | 1.2 | .10 | .06 |
| 5 | .46 | 8.9 | 9.5 | 11 | 14 | 12 | 17 | 18 | 13 | 1.0 | .10 | .08 |
| 6 | .48 | 7.9 | 9.3 | 12 | 13 | 13 | 16 | 18 | 12 | .94 | .10 | .08 |
| 7 | .49 | 8.0 | 9.2 | 11 | 14 | 13 | 15 | 17 | 11 | .80 | .10 | .08 |
| 8 | .44 | 8.2 | 8.8 | 10 | 13 | 14 | 14 | 16 | 10 | .75 | .08 | .08 |
| 9 | .42 | 8.5 | 8.8 | 10 | 12 | 16 | 14 | 16 | 9.6 | .68 | .08 | .09 |
| 10 | .47 | 8.4 | 9.5 | 12 | 12 | 15 | 14 | 15 | 8.9 | .60 | .08 | .15 |
| 11 | .64 | 8.1 | 9.4 | 11 | 13 | 14 | 14 | 14 | 8.6 | .52 | .08 | .13 |
| 12 | .77 | 8.1 | 8.8 | 10 | 15 | 14 | 13 | 13 | 8.1 | .48 | .07 | .12 |
| 13 | .77 | 7.9 | 9.1 | 11 | 15 | 14 | 13 | 12 | 7.6 | .40 | .05 | .10 |
| 14 | .77 | 8.0 | 9.5 | 11 | 15 | 14 | 13 | 12 | 6.8 | .38 | .05 | .10 |
| 15 | .84 | 7.9 | 10 | 11 | 14 | 14 | 13 | 40 | 6.2 | .34 | .05 | .10 |
| 16 | .91 | 7.9 | 10 | 10 | 13 | 14 | 12 | 71 | 5.5 | .30 | .05 | .08 |
| 17 | .91 | 8.0 | 9.9 | 10 | 13 | 14 | 12 | 34 | 5.0 | .26 | .05 | .10 |
| 18 | .99 | 8.4 | 9.5 | 11 | 15 | 14 | 11 | 44 | 4.5 | .24 | .04 | .08 |
| 19 | 1.1 | 8.1 | 11 | 12 | 15 | 14 | 11 | 33 | 4.1 | .22 | .04 | .08 |
| 20 | .99 | 8.1 | 11 | 11 | 14 | 14 | 11 | 24 | 3.7 | .20 | .04 | .08 |
| 21 | .91 | 7.8 | 11 | 10 | 13 | 13 | 10 | 25 | 3.4 | .20 | .04 | .07 |
| 22 | .91 | 7.6 | 11 | 12 | 13 | 14 | 9.9 | 21 | 3.1 | .20 | .03 | .08 |
| 23 | .99 | 8.0 | 10 | 16 | 13 | 15 | 9.6 | 19 | 2.9 | .21 | .03 | .07 |
| 24 | 1.2 | 8.0 | 9.3 | 15 | 13 | 16 | 17 | 17 | 2.7 | .21 | .03 | .07 |
| 25 | 1.2 | 8.1 | 9.5 | 14 | 13 | 15 | 43 | 16 | 2.5 | .21 | .03 | .07 |
| 26 | 1.3 | 8.2 | 9.8 | 13 | 13 | 14 | 25 | 14 | 2.4 | .18 | .03 | .07 |
| 27 | 1.3 | 8.1 | 9.7 | 12 | 13 | 16 | 21 | 17 | 2.2 | .18 | .03 | .18 |
| 28 | 1.3 | 7.9 | 10 | 12 | 13 | 67 | 18 | 26 | 2.1 | .18 | .02 | .15 |
| 29 | 2.3 | 7.5 | 10 | 11 | 13 | 40 | 17 | 26 | 2.0 | .18 | .02 | .15 |
| 30 | 117 | 7.0 | 10 | 11 | --- | 26 | 15 | 22 | 1.8 | .15 | .02 | .15 |
| 31 | 47 | --- | 11 | 11 | --- | 21 | --- | 18 | --- | .15 | .01 | --- |
| TOTAL | 188.41 | 263.6 | 298.0 | 355 | 390 | 522 | 470.5 | 716 | 208.7 | 15.66 | 1.87 | 2.71 |
| MEAN | 6.08 | 8.79 | 9.61 | 11.5 | 13.4 | 16.8 | 15.7 | 23.1 | 6.96 | .51 | .060 | .090 |
| MAX | 117 | 19 | 11 | 16 | 15 | 67 | 43 | 71 | 17 | 1.6 | .15 | .18 |
| MIN | .37 | 7.0 | 7.5 | 10 | 12 | 10 | 9.6 | 12 | 1.8 | .15 | .01 | .01 |
| CFSM | .02 | .03 | .04 | .04 | .05 | .06 | .06 | .09 | .03 | .002 | .000 | .000 |
| IN. | .03 | .04 | .04 | .05 | .05 | .07 | .07 | .10 | .03 | .00 | .00 | .00 |
| AC-FT | 374 | 523 | 591 | 704 | 774 | 1040 | 933 | 1420 | 414 | 31 | 3.7 | 5.4 |

CAL YR 1979 TOTAL 4099.38 MEAN 11.2 MAX 123 MIN .37 CFSM .04 IN .57 AC-FT 8130
WTR YR 1980 TOTAL 3432.45 MEAN 9.38 MAX 117 MIN .01 CFSM .04 IN .48 AC-FT 6810

## 07301410 SWEETWATER CREEK NEAR KELTON, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICRO-MHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>10... | 1700 | .50 | 1280 | -- | 19.0 | 540 | 360 | 150 | 41 | 80 |
| NOV<br>20... | 1210 | 8.1 | 918 | -- | 15.0 | 370 | 110 | 110 | 24 | 63 |
| JAN<br>04... | 0925 | 11 | 848 | -- | 3.0 | 340 | 78 | 100 | 22 | 57 |
| FEB<br>07... | 1240 | 13 | 753 | -- | 4.5 | 290 | 74 | 82 | 20 | 49 |
| MAR<br>18... | 1650 | 14 | 832 | 8.2 | 15.0 | 340 | 89 | 98 | 22 | 53 |
| MAY<br>02... | 1145 | 28 | 779 | -- | 16.0 | 280 | 18 | 81 | 19 | 62 |
| JUN<br>09... | 1640 | 10 | 944 | -- | 26.0 | 380 | 140 | 110 | 25 | 60 |
| JUL<br>21... | 1730 | .20 | 1340 | -- | 31.0 | 520 | 380 | 140 | 42 | 91 |
| SEP<br>02... | 1600 | .01 | 1440 | -- | 32.0 | 500 | 420 | 120 | 48 | 120 |

| DATE | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT<br>10... | 1.5 | 3.2 | 220 | 0 | 450 | 62 | .6 | 22 | 917 |
| NOV<br>20... | 1.4 | 3.4 | 320 | 0 | 180 | 44 | .7 | 24 | 607 |
| JAN<br>04... | 1.3 | 2.7 | 320 | 0 | 150 | 40 | .7 | 22 | 552 |
| FEB<br>07... | 1.3 | 2.6 | 260 | 0 | 140 | 37 | .5 | 23 | 482 |
| MAR<br>18... | 1.3 | 2.8 | 300 | 0 | 140 | 36 | .6 | 25 | 525 |
| MAY<br>02... | 1.6 | 4.9 | 320 | 0 | 93 | 43 | 1.2 | 28 | 490 |
| JUN<br>09... | 1.3 | 2.8 | 290 | 0 | 210 | 43 | .7 | 27 | 621 |
| JUL<br>21... | 1.7 | 4.3 | 170 | 0 | 490 | 65 | .6 | 25 | 942 |
| SEP<br>02... | 2.3 | 3.3 | 98 | 0 | 560 | 86 | .7 | 35 | 1020 |

## 07307760 MIDDLE PEASE RIVER NEAR PADUCAH, TX

LOCATION.--Lat 34°11'28", long 100°12'38", Cottle County, Hydrologic Unit 11130104, on right bank 500 ft (152 m) upstream from pipeline crossing, 0.8 mi (1.3 km) upstream from Jackson Creek, 2 mi (3 km) downstream from Owl Creek, 8 mi (13 km) upstream from confluence with North Pease River, and 13 mi (21 km) northeast of Paducah.

DRAINAGE AREA.--1,128 mi² (2,922 km²), of which 65 mi² (168 km²) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to September 1980.

GAGE.--Water-stage recorder. Datum of gage is 1,583.51 ft (482.654 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Water-discharge records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 362 ft³/s (10.3 m³/s) May 20, 1980, at 1800 hours, gage height, 3.69 ft (1.125 m); minimum, 0.75 ft³/s (0.02 m³/s) May 13, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 362 ft³/s (10.3 m³/s) May 20 at 1800 hours, gage height, 3.69 ft (1.125 m), no peak above base of 500 ft³/s (14.2 m³/s); minimum, 0.75 ft³/s (0.02 m³/s) May 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.5 | 4.7 | 11 | 3.9 | 5.8 | 4.0 | 4.0 | 3.8 | 4.5 | 2.3 | 2.2 | 2.4 |
| 2 | 3.5 | 4.7 | 11 | 3.7 | 5.8 | 3.5 | 5.7 | 4.0 | 4.4 | 2.3 | 2.4 | 2.3 |
| 3 | 3.5 | 4.2 | 7.4 | 3.8 | 5.3 | 4.2 | 4.3 | 2.6 | 3.9 | 2.3 | 2.6 | 2.2 |
| 4 | 4.0 | 4.2 | 3.1 | 3.8 | 5.2 | 4.0 | 3.9 | 2.6 | 3.5 | 2.2 | 2.7 | 2.0 |
| 5 | 4.0 | 4.2 | 3.0 | 3.9 | 4.1 | 3.7 | 3.9 | 2.1 | 3.3 | 2.3 | 2.7 | 2.0 |
| 6 | 4.0 | 3.8 | 3.1 | 3.8 | 3.8 | 3.9 | 3.8 | 2.3 | 3.2 | 2.2 | 3.0 | 2.0 |
| 7 | 4.0 | 4.2 | 3.1 | 3.7 | 5.2 | 3.9 | 3.2 | 1.9 | 3.3 | 2.2 | 3.3 | 2.0 |
| 8 | 4.0 | 4.7 | 3.1 | 3.7 | 5.0 | 3.8 | 3.6 | 7.2 | 12 | 2.2 | 3.3 | 2.1 |
| 9 | 4.0 | 5.2 | 3.1 | 3.7 | 4.0 | 4.2 | 3.5 | 2.0 | 5.8 | 2.2 | 3.4 | 9.1 |
| 10 | 4.0 | 4.7 | 3.3 | 4.2 | 4.5 | 4.5 | 3.5 | 1.7 | 3.7 | 2.2 | 3.4 | 7.8 |
| 11 | 4.0 | 4.7 | 3.4 | 4.2 | 5.0 | 4.7 | 3.5 | 1.2 | 6.1 | 2.0 | 3.2 | 3.0 |
| 12 | 4.0 | 6.4 | 10 | 4.2 | 5.6 | 4.5 | 3.4 | 1.1 | 84 | 2.0 | 3.0 | 1.9 |
| 13 | 4.0 | 4.2 | 9.6 | 4.2 | 5.1 | 4.4 | 3.6 | .98 | 41 | 2.0 | 2.9 | 1.8 |
| 14 | 3.5 | 4.7 | 12 | 4.2 | 4.7 | 4.7 | 3.8 | 1.8 | 31 | 1.8 | 2.9 | 1.8 |
| 15 | 3.5 | 4.7 | 7.9 | 4.2 | 4.2 | 4.7 | 3.7 | 55 | 18 | 1.8 | 2.9 | 1.8 |
| 16 | 3.5 | 4.7 | 6.2 | 4.2 | 4.0 | 4.4 | 3.7 | 67 | 8.6 | 2.0 | 2.7 | 1.9 |
| 17 | 3.8 | 4.7 | 5.8 | 4.2 | 3.5 | 4.3 | 3.7 | 93 | 5.9 | 2.0 | 2.7 | 1.9 |
| 18 | 3.8 | 4.7 | 5.8 | 4.2 | 4.0 | 3.9 | 3.7 | 40 | 8.5 | 2.0 | 2.4 | 1.8 |
| 19 | 3.4 | 4.7 | 5.8 | 51 | 4.5 | 4.2 | 3.8 | 19 | 20 | 2.0 | 2.3 | 1.7 |
| 20 | 3.4 | 58 | 5.8 | 35 | 5.3 | 3.7 | 3.6 | 50 | 5.1 | 2.0 | 3.2 | 1.8 |
| 21 | 3.4 | 18 | 5.8 | 29 | 4.4 | 3.2 | 3.3 | 34 | 3.7 | 2.4 | 4.9 | 1.8 |
| 22 | 3.8 | 15 | 5.1 | 26 | 4.2 | 3.1 | 3.3 | 64 | 2.8 | 2.3 | 1.7 | 1.9 |
| 23 | 4.2 | 14 | 4.1 | 20 | 3.7 | 3.8 | 3.4 | 27 | 3.1 | 2.3 | 1.6 | 2.0 |
| 24 | 4.2 | 14 | 4.2 | 13 | 4.1 | 4.3 | 13 | 12 | 3.5 | 2.3 | 1.7 | 1.9 |
| 25 | 4.7 | 14 | 4.2 | 9.0 | 4.4 | 4.3 | 11 | 6.9 | 3.1 | 2.2 | 1.8 | 2.3 |
| 26 | 4.7 | 12 | 4.2 | 8.3 | 4.2 | 4.3 | 6.8 | 4.5 | 3.0 | 2.4 | 1.8 | 11 |
| 27 | 4.7 | 11 | 4.4 | 8.3 | 4.2 | 14 | 4.6 | 3.8 | 3.1 | 2.8 | 1.8 | 9.9 |
| 28 | 4.2 | 11 | 4.2 | 7.6 | 4.1 | 9.3 | 4.2 | 4.1 | 2.6 | 2.7 | 2.0 | 6.6 |
| 29 | 4.7 | 11 | 3.8 | 7.0 | 4.2 | 6.2 | 3.4 | 3.9 | 2.3 | 2.3 | 2.2 | 5.5 |
| 30 | 23 | 11 | 3.9 | 7.0 | --- | 5.0 | 4.4 | 4.1 | 2.4 | 2.3 | 2.3 | 4.4 |
| 31 | 5.2 | --- | 3.8 | 6.4 | --- | 4.1 | --- | 4.0 | --- | 2.2 | 2.5 | --- |
| TOTAL | 142.2 | 277.1 | 171.2 | 299.4 | 132.1 | 144.8 | 133.3 | 527.58 | 305.4 | 68.2 | 81.5 | 100.6 |
| MEAN | 4.59 | 9.24 | 5.52 | 9.66 | 4.56 | 4.67 | 4.44 | 17.0 | 10.2 | 2.20 | 2.63 | 3.35 |
| MAX | 23 | 58 | 12 | 51 | 5.8 | 14 | 13 | 93 | 84 | 2.8 | 4.9 | 11 |
| MIN | 3.4 | 3.8 | 3.0 | 3.7 | 3.5 | 3.1 | 3.2 | .98 | 2.3 | 1.8 | 1.6 | 1.7 |
| AC-FT | 282 | 550 | 340 | 594 | 262 | 287 | 264 | 1050 | 606 | 135 | 162 | 200 |

CAL YR 1979 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1980 TOTAL 2383.38 MEAN 6.51 MAX 93 MIN .98 AC-FT 4730

## 07307760 MIDDLE PEASE RIVER NEAR PADUCAH, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1979 to September 1980.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1979 to September 1980.
WATER TEMPERATURES: October 1979 to september 1980.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 51,500 micromhos June 2, 3; minimum daily, 5,770 micromhos May 17.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | |
| 17... | 0935 | 3.7 | 46700 | 18.5 | 4300 | -- | 1300 | 250 | -- | -- |
| DEC | | | | | | | | | | |
| 03... | 1215 | 3.8 | 47200 | 10.5 | 4300 | 4200 | 1300 | 250 | 9600 | 64 |
| JAN | | | | | | | | | | |
| 15... | 1300 | 4.2 | 46500 | 13.5 | 4300 | 4200 | 1300 | 250 | 10000 | 67 |
| FEB | | | | | | | | | | |
| 04... | 1250 | 5.2 | 45700 | 12.0 | 4300 | 4200 | 1300 | 250 | 10000 | 67 |
| 25... | 1315 | 4.2 | -- | 14.5 | -- | -- | -- | -- | -- | -- |
| MAR | | | | | | | | | | |
| 19... | 1350 | 4.3 | -- | 19.0 | -- | -- | -- | -- | -- | -- |
| APR | | | | | | | | | | |
| 08... | 0740 | 4.0 | -- | 7.0 | -- | -- | -- | -- | -- | -- |
| 28... | 1305 | 4.3 | 45300 | 27.0 | 4000 | 3900 | 1200 | 240 | 10000 | 69 |
| 28... | 1345 | 4.3 | -- | 27.0 | -- | -- | -- | -- | -- | -- |
| MAY | | | | | | | | | | |
| 15... | -- | 53 | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | -- | 240 | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | 0735 | 157 | 19800 | 16.0 | 1900 | 1900 | 610 | 100 | 4200 | 42 |
| 21... | 0735 | 157 | -- | 16.0 | -- | -- | -- | -- | -- | -- |
| JUN | | | | | | | | | | |
| 08... | -- | 34 | -- | -- | -- | -- | -- | -- | -- | -- |
| 09... | 1430 | 4.6 | 43200 | 27.0 | 3900 | 3800 | 1200 | 230 | 9800 | 68 |
| 30... | 1150 | 2.8 | -- | 31.5 | -- | -- | -- | -- | -- | -- |
| JUL | | | | | | | | | | |
| 21... | 1350 | 2.4 | 49800 | 31.5 | 4600 | 4500 | 1400 | 260 | 11000 | 71 |
| AUG | | | | | | | | | | |
| 12... | 1100 | 3.1 | -- | 26.0 | -- | -- | -- | -- | -- | -- |
| SEP | | | | | | | | | | |
| 01... | 1250 | 2.4 | -- | 31.0 | -- | -- | -- | -- | -- | -- |

| DATE | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | |
| 17... | -- | -- | -- | 3500 | 17000 | -- | -- | -- | -- | -- |
| DEC | | | | | | | | | | |
| 03... | 35 | 150 | 0 | 2900 | 16000 | 11 | 30200 | -- | -- | -- |
| JAN | | | | | | | | | | |
| 15... | 33 | 140 | 0 | 3300 | 17000 | 9.9 | 32000 | -- | -- | -- |
| FEB | | | | | | | | | | |
| 04... | 32 | 140 | 0 | 3300 | 17000 | 9.9 | 32000 | 11 | .16 | 77 |
| 25... | -- | -- | -- | -- | -- | -- | -- | 11 | .12 | 75 |
| MAR | | | | | | | | | | |
| 19... | -- | -- | -- | -- | -- | -- | -- | 23 | .27 | 87 |
| APR | | | | | | | | | | |
| 08... | -- | -- | -- | -- | -- | -- | -- | 55 | .60 | 45 |
| 28... | 30 | 130 | 0 | 3500 | 16000 | 8.0 | 31000 | -- | -- | -- |
| 28... | -- | -- | -- | -- | -- | -- | -- | 39 | .46 | 92 |
| MAY | | | | | | | | | | |
| 15... | -- | -- | -- | -- | -- | -- | -- | 3290 | 471 | 75 |
| 20... | -- | -- | -- | -- | -- | -- | -- | 9750 | 6320 | 95 |
| 20... | 28 | 89 | 0 | 1700 | 6600 | 6.2 | 13300 | -- | -- | -- |
| 21... | -- | -- | -- | -- | -- | -- | -- | 245 | 104 | 94 |
| JUN | | | | | | | | | | |
| 08... | -- | -- | -- | -- | -- | -- | -- | 4480 | 411 | 87 |
| 09... | 33 | 130 | 0 | 3500 | 16000 | 7.8 | 30800 | 26 | .32 | 93 |
| 30... | -- | -- | -- | -- | -- | -- | -- | 33 | .25 | 73 |
| JUL | | | | | | | | | | |
| 21... | 37 | 110 | 0 | 3900 | 18000 | .4 | 34700 | 19 | .12 | 89 |
| AUG | | | | | | | | | | |
| 12... | -- | -- | -- | -- | -- | -- | -- | 36 | .30 | -- |
| SEP | | | | | | | | | | |
| 01... | -- | -- | -- | -- | -- | -- | -- | 9 | .06 | 91 |

## 07307760 MIDDLE PEASE RIVER NEAR PADUCAH, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | TEMPER-ATURE, WATER (DEG C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 04... | 1250 | 5.2 | 12.0 | 11 | .16 | 77 | -- | -- | -- |
| 25... | 1315 | 4.2 | 14.5 | 11 | .12 | 75 | -- | -- | -- |
| MAR | | | | | | | | | |
| 19... | 1350 | 4.3 | 19.0 | 23 | .27 | 87 | -- | -- | -- |
| APR | | | | | | | | | |
| 08... | 0740 | 4.0 | 7.0 | 55 | .60 | 45 | -- | -- | -- |
| 28... | 1345 | 4.3 | 27.0 | 39 | .46 | 92 | -- | -- | -- |
| MAY | | | | | | | | | |
| 15... | -- | 53 | -- | 3290 | 471 | 75 | 86 | 93 | 100 |
| 20... | -- | 240 | -- | 9750 | 6320 | 95 | 99 | 99 | 100 |
| 21... | 0735 | 157 | 16.0 | 245 | 104 | 94 | -- | -- | -- |
| JUN | | | | | | | | | |
| 08... | -- | 34 | -- | 4480 | 411 | 87 | 96 | 99 | 100 |
| 09... | 1430 | 4.6 | 27.0 | 26 | .32 | 93 | -- | -- | -- |
| 30... | 1150 | 2.8 | 31.5 | 33 | .25 | 73 | -- | -- | -- |
| JUL | | | | | | | | | |
| 21... | 1350 | 2.4 | 31.5 | 19 | .12 | 89 | -- | -- | -- |
| AUG | | | | | | | | | |
| 12... | 1100 | 3.1 | 26.0 | 36 | .30 | -- | -- | -- | -- |
| SEP | | | | | | | | | |
| 01... | 1250 | 2.4 | 31.0 | 9 | .06 | 91 | -- | -- | -- |

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 142.2 | 42400 | 29100 | 11200 | 15200 | 5850 | 3100 | 1210 | * |
| NOV. | 1979 | 277.1 | 38100 | 26100 | 19500 | 13700 | 10200 | 2800 | 2130 | * |
| DEC. | 1979 | 171.2 | 46200 | 31700 | 14600 | 16600 | 7690 | 3400 | 1570 | * |
| JAN. | 1980 | 299.4 | 36400 | 25000 | 20200 | 13000 | 10500 | 2800 | 2240 | * |
| FEB. | 1980 | 132.1 | 45100 | 30900 | 11000 | 16200 | 5780 | 3300 | 1190 | * |
| MAR. | 1980 | 144.8 | 46200 | 31700 | 12400 | 16700 | 6510 | 3400 | 1330 | * |
| APR. | 1980 | 133.3 | 43500 | 29900 | 10700 | 15600 | 5620 | 3300 | 1170 | * |
| MAY | 1980 | 527.58 | 17600 | 12100 | 17200 | 6100 | 8710 | 1500 | 2100 | * |
| JUNE | 1980 | 305.4 | 25200 | 17300 | 14300 | 8900 | 7370 | 2000 | 1640 | * |
| JULY | 1980 | 68.2 | 47800 | 32800 | 6040 | 17300 | 3180 | 3500 | 643 | * |
| AUG. | 1980 | 81.5 | 47200 | 32300 | 7120 | 17000 | 3740 | 3500 | 760 | * |
| SEPT | 1980 | 100.6 | 41900 | 28800 | 7810 | 15000 | 4070 | 3200 | 863 | * |
| TOTAL | | 2383.38 | ** | ** | 152000 | ** | 79300 | ** | 16900 | ** |
| WTD. AVG. | | 6.5 | 34500 | 23600 | ** | 12000 | ** | 2600 | ** | ** |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 47400 | 46900 | 47100 | 46100 | 45400 | 46200 | 42500 | 43000 | 51100 | 47600 | 49800 | 48500 |
| 2 | 47200 | 46900 | 47300 | 46200 | 45900 | 46100 | 42000 | 43300 | 51500 | 47700 | 49900 | 42500 |
| 3 | 46900 | 47200 | 47200 | 46300 | 45800 | 46200 | 41900 | 43400 | 51500 | 47500 | 50100 | 41500 |
| 4 | 46400 | 47400 | 46900 | 46300 | 45700 | 46500 | 42200 | 43600 | 51200 | 46800 | 50300 | 40900 |
| 5 | 46600 | 47300 | 47200 | 45800 | 46300 | 46300 | 42500 | 43800 | 50900 | 46900 | 50000 | 40900 |
| 6 | 46500 | 47300 | 47500 | 46500 | 46100 | 46000 | 43200 | 44000 | 50300 | 47000 | 48800 | 40300 |
| 7 | 46200 | 46900 | 47400 | 46500 | 46200 | 46400 | 44400 | 44300 | 48500 | 47100 | 47700 | 39600 |
| 8 | 46300 | 47000 | 47100 | 46500 | 42000 | 46500 | 45700 | 41300 | 35300 | 47200 | 47200 | 39800 |
| 9 | 45900 | 46800 | 46900 | 46100 | 44500 | 46400 | 45000 | 43500 | 43200 | 47600 | 47100 | 37300 |
| 10 | 45800 | 46700 | 46700 | 46300 | 44400 | 46500 | 44200 | 44300 | 49500 | 48100 | 47500 | 37200 |
| 11 | 46000 | 46600 | 47500 | 46900 | 45100 | 46800 | 44300 | 45500 | 47000 | 48200 | 47300 | 41300 |
| 12 | 45900 | 46100 | 45200 | 46700 | 45200 | 47400 | 44600 | 46300 | 7350 | 48300 | 47500 | 42300 |
| 13 | 45700 | 46500 | 44500 | 46600 | 44700 | 47600 | 45000 | 46700 | 10500 | 48400 | 47600 | 40500 |
| 14 | 46400 | 46000 | 41700 | 46400 | 44100 | 47400 | 45400 | 45500 | 19800 | 48400 | 47100 | 39900 |
| 15 | 46300 | 46600 | 45300 | 46500 | 42700 | 47600 | 44900 | 19000 | 26700 | 48500 | 47400 | 39800 |
| 16 | 46900 | 46600 | 46900 | 46400 | 42000 | 47800 | 45200 | 17700 | 39800 | 49000 | 47600 | 41100 |
| 17 | 46600 | 46500 | 47600 | 46700 | 43700 | 47900 | 45800 | 5770 | 48500 | 49500 | 48500 | 41500 |
| 18 | 44400 | 46600 | 46800 | 46900 | 44300 | 47600 | 46300 | 11100 | 47700 | 49500 | 49400 | 43100 |
| 19 | 44600 | 46800 | 46600 | 8270 | 44800 | 45900 | 45700 | 20400 | 27300 | 49700 | 50000 | 43400 |
| 20 | 47800 | 8360 | 46700 | 31200 | 45700 | 47200 | 45300 | 19800 | 39400 | 49700 | 49800 | 44000 |
| 21 | 49700 | 36500 | 46700 | 39500 | 46100 | 47700 | 46000 | 21900 | 41500 | 49800 | 43800 | 45200 |
| 22 | 49000 | 45600 | 47000 | 42300 | 46000 | 48100 | 46400 | 6110 | 42000 | 47700 | 40600 | 45500 |
| 23 | 47100 | 46400 | 46600 | 43500 | 46400 | 49200 | 46200 | 13200 | 42200 | 46300 | 41300 | 45200 |
| 24 | 49300 | 46600 | 46700 | 43900 | 46300 | 50400 | 43500 | 22900 | 43500 | 46500 | 42000 | 44600 |
| 25 | 49500 | 46800 | 46800 | 43800 | 45400 | 49900 | 37000 | 33100 | 44800 | 46700 | 42800 | 44500 |
| 26 | 49800 | 47100 | 46400 | 43900 | 45100 | 49400 | 39900 | 40900 | 45000 | 46800 | 43500 | 44600 |
| 27 | 49800 | 47300 | 45900 | 44200 | 45200 | 46700 | 45000 | 45500 | 45400 | 47000 | 44200 | 40500 |
| 28 | 49300 | 47200 | 45900 | 44500 | 45400 | 41200 | 45300 | 48100 | 45800 | 47200 | 44900 | 43900 |
| 29 | 49300 | 47400 | 46100 | 44200 | 45700 | 40800 | 45100 | 49600 | 46900 | 47400 | 45600 | 43900 |
| 30 | 17600 | 47400 | 46200 | 44000 | --- | 41200 | 43000 | 50100 | 48000 | 47600 | 46600 | 45300 |
| 31 | 45000 | --- | 46200 | 45200 | --- | 41700 | --- | 50400 | --- | 48100 | 47800 | --- |
| MEAN | 46200 | 45200 | 46500 | 43700 | 45000 | 46500 | 44100 | 35300 | 41400 | 47900 | 46900 | 42300 |

## 07307800 PEASE RIVER NEAR CHILDRESS, TX

LOCATION.--Lat 34°13'39", long 100°04'24", Cottle County, Hydrologic Unit 11130105, near right bank on downstream side of bridge on Farm Road 104, 0.8 mi (1.3 km) upstream from Catfish Creek, 4.4 mi (7.1 km) downstream from confluence of North and Middle Forks, 17 mi (27 km) southeast of Childress, and 71.0 mi (114.2 km) upstream from mouth.

DRAINAGE AREA.--2,754 mi² (7,133 km²), of which 559 mi² (1,448 km²) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1959 to September 1962, October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,492.98 ft (455.060 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 21, 1959, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records fair. Three small diversions for irrigation above station. Flow is affected at times by discharge from the flood-detention pools of six floodwater-retarding structures with a combined detention capacity of 1,360 acre-ft (1.68 hm³). These structures control runoff from 6.97 mi² (18.1 km²) in the Kent Creek drainage basin.

AVERAGE DISCHARGE.--15 years (water years 1961-62, 1967-80), 57.1 ft³/s (1.617 m³/s), 0.35 in/yr (9 mm/yr), 41,370 acre-ft/yr (51.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,000 ft³/s (538 m³/s) June 9, 1960, gage height, 13.59 ft (4.142 m), from rating curve extended above 4,000 ft³/s (113 m³/s) on basis of runoff comparisons with nearby stations; no flow Aug. 10-22, 1969, May 25, 26, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1909, 22 ft (6.7 m) on June 1, 1957; flood in May 1935 reached a stage of 18 ft (5.5 m) and was the second highest, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,790 ft³/s (50.7 m³/s) May 15 at 1515 hours, gage height, 9.67 ft (2.947 m), no peak above base of 2,200 ft³/s (62.3 m³/s); minimum, 0.03 ft³/s (0.001 m³/s) Aug. 25, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.9 | 7.1 | 3.3 | 7.1 | 5.4 | 2.4 | 3.5 | 5.2 | 87 | .74 | .18 | .10 |
| 2 | 1.6 | 3.4 | 3.3 | 6.8 | 6.0 | 3.1 | 4.8 | 24 | 38 | .65 | .17 | .09 |
| 3 | 1.7 | 2.4 | 3.3 | 6.1 | 5.9 | 4.6 | 5.6 | 24 | 21 | .57 | .17 | .08 |
| 4 | 2.1 | 2.2 | 2.7 | 9.7 | 5.8 | 5.3 | 4.1 | 9.2 | 14 | .51 | .19 | .11 |
| 5 | 2.5 | 2.0 | 2.4 | 6.9 | 5.5 | 3.3 | 4.7 | 5.3 | 8.9 | .40 | .18 | .11 |
| 6 | 2.6 | 1.5 | 2.1 | 5.8 | 5.0 | 4.5 | 4.8 | 4.6 | 5.8 | .34 | .18 | .11 |
| 7 | 2.6 | 1.2 | 2.1 | 4.9 | 4.9 | 5.3 | 4.3 | 3.7 | 3.6 | .35 | .17 | .11 |
| 8 | 2.5 | 2.7 | 1.4 | 5.8 | 12 | 4.2 | 3.1 | 3.5 | 14 | .35 | .18 | .11 |
| 9 | 1.8 | 1.8 | 1.4 | 6.4 | 8.3 | 4.3 | 3.4 | 4.2 | 13 | .33 | .18 | .78 |
| 10 | 2.0 | 1.4 | 2.2 | 6.4 | 10 | 4.4 | 4.0 | 4.4 | 6.5 | .32 | .17 | .28 |
| 11 | 2.1 | 1.6 | 2.4 | 5.8 | 11 | 4.4 | 3.3 | 3.4 | 27 | .30 | .16 | .55 |
| 12 | 2.2 | 3.0 | 5.6 | 4.9 | 9.0 | 5.0 | 2.4 | 3.0 | 301 | .26 | .12 | .23 |
| 13 | 1.9 | 2.9 | 7.9 | 5.4 | 8.4 | 3.4 | 2.6 | 2.1 | 138 | .23 | .13 | .19 |
| 14 | 2.1 | 4.1 | 13 | 6.4 | 7.6 | 3.7 | 3.2 | 3.4 | 53 | .22 | .13 | .22 |
| 15 | 2.1 | 4.1 | 13 | 6.4 | 7.5 | 4.1 | 3.5 | 638 | 21 | .22 | .12 | .20 |
| 16 | 2.1 | 4.5 | 5.7 | 5.7 | 8.6 | 5.1 | 3.3 | 622 | 10 | .25 | .12 | .19 |
| 17 | 2.7 | 4.5 | 4.1 | 5.2 | 9.8 | 3.0 | 3.0 | 363 | 4.9 | .25 | .12 | .19 |
| 18 | 2.7 | 4.5 | 5.1 | 5.2 | 11 | 3.2 | 2.7 | 114 | 5.5 | .19 | .12 | .21 |
| 19 | 2.8 | 4.1 | 5.0 | 102 | 16 | 4.3 | 2.9 | 53 | 107 | .16 | .13 | .20 |
| 20 | 2.2 | 276 | 5.6 | 59 | 14 | 4.0 | 3.2 | 86 | 38 | .16 | .11 | .23 |
| 21 | 1.6 | 67 | 5.4 | 29 | 10 | 4.0 | 3.0 | 285 | 15 | .16 | .23 | .23 |
| 22 | .68 | 19 | 6.0 | 14 | 10 | 4.2 | 2.6 | 209 | 4.9 | .18 | .10 | .20 |
| 23 | .80 | 6.9 | 5.0 | 12 | 8.6 | 5.1 | 2.8 | 85 | 1.2 | .19 | .09 | .20 |
| 24 | 1.1 | 3.7 | 4.8 | 9.7 | 8.0 | 3.5 | 8.0 | 46 | .69 | .17 | .08 | .23 |
| 25 | 1.4 | 3.3 | 5.4 | 8.2 | 7.5 | 3.8 | 12 | 31 | .69 | .19 | .08 | .26 |
| 26 | 1.8 | 2.7 | 6.4 | 9.2 | 5.4 | 4.9 | 11 | 25 | .69 | .19 | .08 | 1.2 |
| 27 | 2.1 | 2.4 | 6.7 | 7.5 | 5.6 | 6.9 | 5.9 | 176 | .69 | .17 | .09 | 10 |
| 28 | 1.9 | 2.7 | 6.8 | 6.4 | 5.9 | 16 | 4.9 | 221 | .69 | .19 | .09 | 9.2 |
| 29 | 2.5 | 2.7 | 6.0 | 6.4 | 3.6 | 7.2 | 4.1 | 80 | .60 | .18 | .09 | 6.3 |
| 30 | 132 | 3.0 | 5.8 | 6.0 | --- | 5.1 | 4.3 | 47 | .51 | .19 | .08 | 4.8 |
| 31 | 33 | --- | 6.5 | 5.8 | --- | 4.5 | --- | 37 | --- | .19 | .08 | --- |
| TOTAL | 223.08 | 448.4 | 156.4 | 386.1 | 236.3 | 146.8 | 131.0 | 3218.0 | 942.86 | 8.80 | 4.12 | 36.91 |
| MEAN | 7.20 | 14.9 | 5.05 | 12.5 | 8.15 | 4.74 | 4.37 | 104 | 31.4 | .28 | .13 | 1.23 |
| MAX | 132 | 276 | 13 | 102 | 16 | 16 | 12 | 638 | 301 | .74 | .23 | 10 |
| MIN | .68 | 1.2 | 1.4 | 4.9 | 3.6 | 2.4 | 2.4 | 2.1 | .51 | .16 | .08 | .08 |
| CFSM | .003 | .007 | .002 | .006 | .004 | .002 | .002 | .05 | .01 | .000 | .000 | .001 |
| IN. | .00 | .01 | .00 | .01 | .00 | .00 | .00 | .05 | .02 | .00 | .00 | .00 |
| AC-FT | 442 | 889 | 310 | 766 | 469 | 291 | 260 | 6380 | 1870 | 17 | 8.2 | 73 |

CAL YR 1979 TOTAL 35138.58 MEAN 96.3 MAX 4440 MIN .68 CFSM .04 IN .60 AC-FT 69700
WTR YR 1980 TOTAL 5938.77 MEAN 16.2 MAX 638 MIN .08 CFSM .007 IN .10 AC-FT 11780

## 07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1968 to current year.
WATER TEMPERATURES: July 1968 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 43,800 micromhos Apr. 11, 1974; minimum daily, 1,580 micromhos Nov. 20, 1979.
WATER TEMPERATURES: Maximum daily, 37.0°C on several days during summer months of 1969, 1976, 1978, and 1980; minimum daily, 0.0°C on several days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 41,600 micromhos Apr. 7; minimum daily, 1,580 micromhos Nov. 20.
WATER TEMPERATURES: Minimum daily, 37.0°C July 11; minimum daily, 1.0°C Ja. 28, 29, Feb. 8.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | | |
| 11... | 1125 | 5.2 | -- | 21.5 | -- | -- | -- | -- | -- | -- | -- |
| 23... | 1500 | 23 | 34100 | 21.0 | 3900 | -- | 1200 | 230 | -- | -- | -- |
| NOV | | | | | | | | | | | |
| 14... | 1505 | 4.2 | 37800 | 17.0 | 3100 | 3000 | 950 | 180 | 5900 | 46 | 40 |
| JAN | | | | | | | | | | | |
| 15... | 1405 | 6.4 | 38400 | 12.0 | 4000 | 3900 | 1200 | 240 | 8400 | 58 | 40 |
| FEB | | | | | | | | | | | |
| 25... | 1445 | 7.5 | 39000 | 17.5 | 4000 | 3900 | 1200 | 250 | 8300 | 57 | 55 |
| APR | | | | | | | | | | | |
| 08... | 1020 | 3.1 | 40200 | 13.0 | 4300 | 4200 | 1300 | 250 | 8600 | 57 | 27 |
| MAY | | | | | | | | | | | |
| 21... | 0925 | 150 | 6740 | 16.0 | 1000 | 940 | 340 | 46 | 1100 | 15 | 11 |
| JUN | | | | | | | | | | | |
| 09... | 1705 | 11 | 27200 | 30.5 | 2800 | 2700 | 850 | 170 | 5400 | 44 | 21 |
| JUL | | | | | | | | | | | |
| 21... | 1530 | .16 | 33700 | 34.0 | 4100 | 4000 | 1200 | 260 | 6900 | 47 | 51 |

| DATE | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | |
| 11... | -- | -- | -- | -- | -- | -- | -- | 35 | .49 | 96 |
| 23... | -- | -- | 3100 | 11000 | -- | -- | -- | -- | -- | -- |
| NOV | | | | | | | | | | |
| 14... | 130 | 0 | 2500 | 9600 | -- | 10 | 19200 | -- | -- | -- |
| JAN | | | | | | | | | | |
| 15... | 150 | 0 | 3300 | 13000 | -- | 10 | 26300 | -- | -- | -- |
| FEB | | | | | | | | | | |
| 25... | 150 | 0 | 3400 | 13000 | -- | 9.8 | 26300 | -- | -- | -- |
| APR | | | | | | | | | | |
| 08... | 140 | 0 | 3200 | 14000 | -- | 7.7 | 27500 | -- | -- | -- |
| MAY | | | | | | | | | | |
| 21... | 120 | 0 | 930 | 1800 | .5 | 6.8 | 4290 | -- | -- | -- |
| JUN | | | | | | | | | | |
| 09... | 120 | 0 | 2500 | 8200 | -- | 6.6 | 17200 | -- | -- | -- |
| JUL | | | | | | | | | | |
| 21... | 100 | 0 | 3200 | 12000 | -- | .3 | 23700 | -- | -- | -- |

## 07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | TEMPER-ATURE, WATER (DEG C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. FALL DIAM. % FINER THAN .002 MM | SED. SUSP. FALL DIAM. % FINER THAN .004 MM |
|---|---|---|---|---|---|---|---|
| OCT | | | | | | | |
| 03... | 1000 | 1.7 | 16.5 | 50 | .23 | -- | -- |
| 11... | 1125 | 5.2 | 21.5 | 35 | .49 | -- | -- |
| NOV | | | | | | | |
| 14... | 1505 | 4.2 | 17.0 | 7 | .08 | -- | -- |
| DEC | | | | | | | |
| 03... | 1320 | 2.4 | 12.0 | 16 | .10 | -- | -- |
| 26... | 1555 | 6.4 | 13.5 | 6 | .10 | -- | -- |
| JAN | | | | | | | |
| 15... | 1405 | 6.4 | 12.0 | 9 | .16 | -- | -- |
| FEB | | | | | | | |
| 04... | 1555 | 7.4 | 13.5 | 15 | .30 | -- | -- |
| 25... | 1445 | 7.5 | 17.5 | 7 | .14 | -- | -- |
| MAR | | | | | | | |
| 19... | 1555 | 4.7 | 21.0 | 6 | .08 | -- | -- |
| APR | | | | | | | |
| 08... | 1020 | 3.1 | 13.0 | 31 | .26 | -- | -- |
| 28... | 1540 | 4.8 | 29.0 | 22 | .29 | -- | -- |
| MAY | | | | | | | |
| 21... | 0925 | 151 | 16.0 | 4520 | 1840 | 56 | 68 |
| JUN | | | | | | | |
| 09... | 1705 | 10 | 30.5 | 151 | 4.3 | -- | -- |
| 30... | 1250 | .69 | 32.0 | 28 | .05 | -- | -- |
| JUL | | | | | | | |
| 21... | 1530 | .16 | 34.0 | 8 | .00 | -- | -- |
| AUG | | | | | | | |
| 12... | 1215 | .03 | 31.0 | 18 | .00 | -- | -- |
| SEP | | | | | | | |
| 01... | 1440 | .11 | 30.0 | 5 | .00 | -- | -- |

| DATE | SED. SUSP. FALL DIAM. % FINER THAN .008 MM | SED. SUSP. FALL DIAM. % FINER THAN .016 MM | SED. SUSP. FALL DIAM. % FINER THAN .031 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM |
|---|---|---|---|---|---|---|---|
| OCT | | | | | | | |
| 03... | -- | -- | -- | 34 | -- | -- | -- |
| 11... | -- | -- | -- | 96 | -- | -- | -- |
| NOV | | | | | | | |
| 14... | -- | -- | -- | 42 | -- | -- | -- |
| DEC | | | | | | | |
| 03... | -- | -- | -- | 79 | -- | -- | -- |
| 26... | -- | -- | -- | 56 | -- | -- | -- |
| JAN | | | | | | | |
| 15... | -- | -- | -- | 83 | -- | -- | -- |
| FEB | | | | | | | |
| 04... | -- | -- | -- | 66 | -- | -- | -- |
| 25... | -- | -- | -- | 53 | -- | -- | -- |
| MAR | | | | | | | |
| 19... | -- | -- | -- | 57 | -- | -- | -- |
| APR | | | | | | | |
| 08... | -- | -- | -- | 63 | -- | -- | -- |
| 28... | -- | -- | -- | 77 | -- | -- | -- |
| MAY | | | | | | | |
| 21... | 81 | 90 | 95 | 96 | 99 | 99 | 100 |
| JUN | | | | | | | |
| 09... | -- | -- | -- | 99 | -- | -- | -- |
| 30... | -- | -- | -- | 91 | -- | -- | -- |
| JUL | | | | | | | |
| 21... | -- | -- | -- | 32 | -- | -- | -- |
| AUG | | | | | | | |
| 12... | -- | -- | -- | 87 | -- | -- | -- |
| SEP | | | | | | | |
| 01... | -- | -- | -- | 33 | -- | -- | -- |

## 07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 223.08 | 15900 | 10000 | 6030 | 4900 | 2980 | 1600 | 936 | * |
| NOV. | 1979 | 448.4 | 9880 | 6250 | 7570 | 3100 | 3790 | 930 | 1120 | 1100 |
| DEC. | 1979 | 156.4 | 36900 | 23700 | 10000 | 12200 | 5170 | 3100 | 1310 | * |
| JAN. | 1980 | 386.1 | 24600 | 15800 | 16400 | 8000 | 8380 | 2200 | 2260 | * |
| FEB. | 1980 | 236.3 | 38000 | 24500 | 15600 | 12700 | 8090 | 3200 | 2010 | * |
| MAR. | 1990 | 146.8 | 38900 | 25200 | 9980 | 13100 | 5170 | 3200 | 1270 | * |
| APR. | 1980 | 131.0 | 37400 | 24100 | 8530 | 12500 | 4410 | 3100 | 1100 | * |
| MAY | 1980 | 3218.0 | 9120 | 5620 | 48800 | 2700 | 23300 | 990 | 8630 | 1200 |
| JUNE | 1980 | 942.86 | 11600 | 7160 | 18200 | 3500 | 8790 | 1200 | 3100 | * |
| JULY | 1980 | 8.80 | 33900 | 21700 | 516 | 11100 | 263 | 3000 | 70 | * |
| AUG. | 1980 | 4.12 | 33600 | 21500 | 239 | 11000 | 122 | 2900 | 33 | * |
| SEPT | 1980 | 36.91 | 35900 | 23100 | 2300 | 11900 | 1190 | 3000 | 304 | * |
| TOTAL | | 5938.77 | ** | ** | 144000 | ** | 71600 | ** | 22100 | ** |
| WTD. AVG. | | 16 | 14300 | 9000 | ** | 4500 | ** | 1400 | ** | ** |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 34500 | 25000 | 37500 | 38400 | 38900 | 38700 | 40000 | 38700 | 9420 | 33300 | 35500 | 32000 |
| 2 | 33900 | 33500 | 37000 | 35600 | 38000 | 38300 | 39800 | 17500 | 16100 | 33900 | 35800 | 32400 |
| 3 | 32200 | 36900 | 37200 | 36500 | 38300 | 38000 | 39600 | 16700 | 22300 | 34600 | 35100 | 33600 |
| 4 | 33400 | 37000 | 37400 | 35500 | 38400 | 38200 | 41000 | 29000 | 25400 | 34700 | 35000 | 33500 |
| 5 | 34100 | 36400 | 37700 | 38200 | 38100 | 38400 | 41100 | 35400 | 31700 | 32200 | 32000 | 33800 |
| 6 | 35200 | 36500 | 37500 | 39000 | 38200 | 38800 | 41000 | 37600 | 33500 | 32000 | 36000 | 34000 |
| 7 | 34100 | 36800 | 37300 | 38100 | 38300 | 38100 | 41600 | 39400 | 35000 | 31500 | 32500 | 32500 |
| 8 | 32700 | 35400 | 37400 | 38200 | 31000 | 38600 | 40400 | 37200 | 26600 | 34600 | 34800 | 31000 |
| 9 | 32200 | 37500 | 37600 | 38300 | 33500 | 39000 | 40300 | 37900 | 29700 | 34900 | 31800 | 24700 |
| 10 | 31600 | 38600 | 37500 | 38000 | 37100 | 38500 | 40100 | 41000 | 36900 | 33400 | 31400 | 31100 |
| 11 | 34000 | 38400 | 38100 | 37500 | 38200 | 38900 | 40000 | 40600 | 23700 | 33800 | 31500 | 30900 |
| 12 | 33300 | 37300 | 32200 | 38500 | 38700 | 37500 | 39400 | 40200 | 6610 | 35100 | 31300 | 32000 |
| 13 | 34000 | 37700 | 36200 | 38000 | 38500 | 39000 | 40000 | 39500 | 5950 | 35400 | 33900 | 32700 |
| 14 | 34300 | 37800 | 34600 | 38100 | 38400 | 39300 | 40100 | 36000 | 10700 | 35300 | 34700 | 32500 |
| 15 | 34900 | 37700 | 36500 | 38400 | 38600 | 39500 | 40400 | 5350 | 22300 | 32200 | 33400 | 32400 |
| 16 | 35100 | 34600 | 38100 | 38200 | 37500 | 39000 | 41000 | 6500 | 25700 | 32500 | 33600 | 32200 |
| 17 | 35300 | 32300 | 37600 | 38400 | 35700 | 39300 | 41100 | 7880 | 27400 | 32200 | 33800 | 32400 |
| 18 | 36600 | 30000 | 37000 | 38500 | 39800 | 39000 | 37600 | 9200 | 31400 | 34500 | 34100 | 31800 |
| 19 | 37800 | 32100 | 37400 | 2900 | 38300 | 39400 | 36900 | 17700 | 7530 | 35700 | 32500 | 32700 |
| 20 | 34500 | 1580 | 37800 | 18100 | 39900 | 39700 | 33500 | 23000 | 13400 | 33900 | 34100 | 33100 |
| 21 | 31200 | 7550 | 35800 | 27600 | 39700 | 40000 | 31300 | 7040 | 22400 | 33800 | 32700 | 38100 |
| 22 | 33400 | 26700 | 37900 | 33700 | 39200 | 40400 | 34100 | 5650 | 30000 | 34300 | 34000 | 32000 |
| 23 | 34000 | 31400 | 38000 | 36900 | 39000 | 40900 | 33800 | 11800 | 32600 | 34800 | 33900 | 30600 |
| 24 | 34700 | 35400 | 37900 | 37900 | 38700 | 39500 | 33000 | 19400 | 33500 | 34600 | 34500 | 31500 |
| 25 | 36900 | 36900 | 37700 | 38100 | 38800 | 39700 | 32500 | 29100 | 33000 | 34200 | 34400 | 32500 |
| 26 | 37000 | 37100 | 37300 | 38300 | 39400 | 39400 | 30500 | 28900 | 32500 | 33800 | 33400 | 34000 |
| 27 | 36400 | 37300 | 37800 | 38600 | 39100 | 38500 | 38400 | 8450 | 33300 | 33700 | 33200 | 32700 |
| 28 | 37800 | 37000 | 37400 | 38300 | 38900 | 37500 | 39200 | 5880 | 33300 | 34700 | 33300 | 38200 |
| 29 | 36600 | 37200 | 37700 | 38200 | 39000 | 39400 | 39900 | 11400 | 32500 | 35000 | 31200 | 39600 |
| 30 | 7920 | 37400 | 37900 | 38000 | --- | 39900 | 37100 | 23200 | 33200 | 35200 | 35700 | 39300 |
| 31 | 14900 | --- | 35500 | 36400 | --- | 40700 | --- | 23100 | --- | 34800 | 31800 | --- |
| MEAN | 33000 | 33200 | 37100 | 35600 | 38100 | 39100 | 38200 | 23600 | 25300 | 34000 | 33600 | 33000 |

## 07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22.0 | 11.0 | 10.0 | 11.0 | 8.0 | --- | 14.0 | 20.0 | 26.0 | 28.0 | 27.0 | 24.0 |
| 2 | 22.0 | 13.0 | 11.0 | 8.0 | 3.0 | --- | 16.0 | --- | 27.0 | 29.0 | 28.0 | 26.0 |
| 3 | 20.0 | 12.0 | 12.0 | 5.0 | 13.0 | --- | 18.0 | 23.0 | 25.0 | 29.0 | 28.0 | 27.0 |
| 4 | 21.0 | 13.0 | 16.0 | 6.0 | 12.0 | --- | 17.0 | 23.0 | 27.0 | 28.0 | 26.0 | 28.0 |
| 5 | 24.0 | 12.0 | 11.0 | 5.0 | 7.0 | --- | 17.0 | 23.0 | 28.0 | 32.0 | 32.0 | 25.0 |
| 6 | 22.0 | 13.0 | 12.0 | 9.0 | 10.0 | --- | 23.0 | 25.0 | 27.0 | 28.0 | 28.0 | 26.0 |
| 7 | 22.0 | 13.0 | 6.0 | 5.0 | 7.0 | --- | 25.0 | 25.0 | 28.0 | 28.0 | 28.0 | 26.0 |
| 8 | 22.0 | 11.0 | 5.0 | 5.0 | 1.0 | 15.0 | 24.0 | 21.0 | --- | 28.0 | 27.0 | 25.0 |
| 9 | 11.0 | 11.0 | 11.0 | 4.0 | 2.0 | --- | 24.0 | 20.0 | 24.0 | 27.0 | 29.0 | 24.0 |
| 10 | 12.0 | 8.0 | 14.0 | 14.0 | 2.0 | --- | 21.0 | 25.0 | 28.0 | 28.0 | 24.0 | 24.0 |
| 11 | 14.0 | 13.0 | 8.0 | 6.0 | 9.0 | 16.0 | 23.0 | 27.0 | 27.0 | 37.0 | 26.0 | 24.0 |
| 12 | 14.0 | 13.0 | 4.0 | 10.0 | 10.0 | 18.0 | 10.0 | 21.0 | 28.0 | 27.0 | 27.0 | 26.0 |
| 13 | 16.0 | 13.0 | 4.0 | 17.0 | 15.0 | 19.0 | 14.5 | 21.0 | 30.0 | 27.0 | 28.0 | 26.0 |
| 14 | 22.0 | 13.0 | 7.0 | 8.0 | 16.0 | 16.0 | 15.0 | 17.0 | 30.0 | 28.0 | 26.0 | 26.0 |
| 15 | 18.0 | 13.0 | 7.0 | 14.0 | 8.0 | 16.0 | 20.0 | 16.0 | 27.0 | 28.0 | 25.0 | 24.0 |
| 16 | 21.0 | 13.0 | 4.0 | 14.0 | 5.0 | 17.0 | 24.0 | 20.0 | 27.0 | 27.0 | 27.0 | 24.0 |
| 17 | 19.0 | 14.0 | 3.0 | 11.0 | 4.0 | 12.0 | 18.0 | 25.0 | 28.0 | 27.0 | 32.0 | 25.0 |
| 18 | 23.0 | 14.0 | 8.0 | --- | --- | 14.0 | 23.0 | 25.0 | 30.0 | 28.0 | 28.0 | 26.0 |
| 19 | 21.0 | --- | 8.0 | 10.0 | --- | 19.0 | 20.0 | 26.0 | 29.0 | 28.0 | 27.0 | 25.0 |
| 20 | 22.0 | 15.0 | 7.0 | 4.0 | --- | 16.0 | 26.0 | 22.0 | 29.0 | 29.0 | 32.0 | 25.0 |
| 21 | 21.0 | 10.0 | 9.0 | 9.0 | 17.0 | 16.5 | 23.0 | 25.0 | 27.0 | 26.0 | 28.0 | 24.0 |
| 22 | 16.0 | 10.0 | 11.0 | 6.0 | 14.0 | --- | --- | 25.0 | 27.0 | 29.0 | 28.0 | 23.0 |
| 23 | 18.0 | 6.0 | 12.0 | 7.0 | 13.0 | 14.0 | --- | 23.0 | 28.0 | 27.0 | 27.0 | 20.0 |
| 24 | 9.0 | 13.0 | 14.0 | 14.0 | 15.0 | 13.0 | --- | 25.0 | 27.0 | 34.0 | 32.0 | 24.0 |
| 25 | 19.0 | 12.0 | 13.0 | 6.0 | 14.0 | 14.0 | 14.0 | 25.0 | 30.0 | 28.0 | 29.0 | --- |
| 26 | 19.0 | 13.0 | 11.0 | 4.0 | 17.0 | 18.0 | 16.0 | 23.0 | 28.0 | 36.0 | 32.0 | --- |
| 27 | 22.0 | 6.0 | 10.0 | 5.0 | 22.0 | 16.0 | 20.0 | 23.0 | 33.0 | 29.0 | 29.0 | 18.0 |
| 28 | 25.0 | 4.0 | 9.0 | 1.0 | 19.0 | 18.0 | 26.0 | 27.0 | 27.0 | 27.0 | 26.0 | 17.0 |
| 29 | 23.0 | 6.0 | 6.0 | 1.0 | --- | 12.0 | 24.0 | 25.0 | 28.0 | 26.0 | 25.0 | 21.0 |
| 30 | 14.0 | 10.0 | 11.0 | 2.0 | --- | 16.0 | 26.0 | 27.0 | 28.0 | 27.0 | 26.0 | 23.0 |
| 31 | 13.0 | --- | 4.0 | 3.0 | --- | 16.0 | --- | 29.0 | --- | 27.0 | 28.0 | --- |
| MEAN | 19.0 | 11.5 | 9.0 | 7.5 | 10.5 | 16.0 | 20.0 | 23.5 | 28.0 | 28.5 | 28.0 | 24.0 |

## 07308200 PEASE RIVER NEAR VERNON, TX

**LOCATION.**--Lat 34°10'44", long 99°16'40", Wilbarger County, Hydrologic Unit 11130105, near left bank on downstream side of bridge on U.S. Highway 283, 1.9 mi (3.1 km) north of Vernon, and 10 mi (16 km) upstream from mouth.

**DRAINAGE AREA.**--3,488 mi$^2$ (9,034 km$^2$), of which 559 mi$^2$ (1,448 km$^2$) probably is noncontributing.

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--December 1959 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 1,166.03 ft (355.406 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Water-discharge records fair. Four small diversions for irrigation above station. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 07307800.

**AVERAGE DISCHARGE.**--20 years (water years 1961-80), 108 ft$^3$/s (3.059 m$^3$/s), 78,250 acre-ft/yr (96.5 hm$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 31,000 ft$^3$/s (878 m$^3$/s) Sept. 19, 1965, gage height, 18.50 ft (5.639 m); no flow at times.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since at least 1890, 24 ft (7.3 m) in 1891. The flood in September 1936 reached a stage of 23.5 ft (7.16 m), and the flood of June 2, 1957, reached a stage of 22.0 ft (6.71 m), from information by local residents.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 22,000 ft$^3$/s (623 m$^3$/s) May 15 at 1945 hours, gage height, 17.00 ft (5.182 m), no other peak above base of 2,500 ft$^3$/s (70.8 m$^3$/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.3 | 31 | 17 | 20 | 25 | 19 | 17 | 9.7 | 129 | 12 | .00 | .00 |
| 2 | 5.8 | 48 | 17 | 20 | 27 | 20 | 17 | 9.0 | 94 | 10 | .00 | .00 |
| 3 | 5.0 | 32 | 16 | 19 | 26 | 20 | 16 | 8.4 | 92 | 9.0 | .00 | 2.5 |
| 4 | 5.0 | 22 | 16 | 19 | 24 | 19 | 13 | 8.0 | 86 | 8.0 | .00 | 2.4 |
| 5 | 4.6 | 16 | 15 | 19 | 23 | 18 | 13 | 7.6 | 70 | 7.1 | .00 | .04 |
| 6 | 4.2 | 12 | 14 | 18 | 22 | 18 | 12 | 18 | 61 | 6.2 | .00 | .00 |
| 7 | 4.2 | 11 | 14 | 17 | 21 | 18 | 11 | 16 | 56 | 5.3 | .00 | .00 |
| 8 | 3.9 | 10 | 14 | 16 | 25 | 16 | 11 | 13 | 73 | 4.5 | .00 | .00 |
| 9 | 3.3 | 9.4 | 14 | 17 | 20 | 17 | 10 | 11 | 89 | 3.8 | .00 | .06 |
| 10 | 2.7 | 8.8 | 14 | 16 | 20 | 16 | 10 | 10 | 70 | 3.4 | .00 | .03 |
| 11 | 2.4 | 8.6 | 14 | 15 | 26 | 17 | 10 | 6.9 | 59 | 2.8 | .00 | .00 |
| 12 | 2.7 | 9.0 | 14 | 16 | 33 | 17 | 9.6 | 5.3 | 54 | 2.3 | .00 | .00 |
| 13 | 2.2 | 8.9 | 15 | 15 | 31 | 16 | 9.7 | 3.5 | 46 | 1.7 | .00 | .00 |
| 14 | 2.2 | 8.6 | 16 | 15 | 29 | 15 | 9.7 | 10 | 107 | 1.4 | .00 | .00 |
| 15 | 49 | 8.6 | 15 | 16 | 28 | 15 | 9.7 | 7760 | 102 | 1.0 | .00 | .00 |
| 16 | 93 | 7.9 | 17 | 16 | 25 | 15 | 9.7 | 6960 | 73 | .79 | .00 | .00 |
| 17 | 22 | 7.6 | 24 | 16 | 23 | 14 | 9.6 | 870 | 59 | .66 | .00 | .00 |
| 18 | 15 | 7.0 | 23 | 16 | 27 | 14 | 9.1 | 487 | 49 | .44 | .00 | .00 |
| 19 | 12 | 7.1 | 21 | 19 | 34 | 14 | 9.7 | 319 | 50 | .28 | .00 | .00 |
| 20 | 8.6 | 40 | 19 | 213 | 35 | 13 | 9.1 | 200 | 49 | .17 | .00 | .00 |
| 21 | 6.7 | 215 | 18 | 256 | 33 | 13 | 8.9 | 181 | 52 | .12 | .00 | .00 |
| 22 | 5.0 | 188 | 17 | 125 | 31 | 13 | 8.3 | 140 | 63 | .10 | .00 | .00 |
| 23 | 4.2 | 75 | 18 | 77 | 27 | 16 | 8.2 | 228 | 49 | .06 | .00 | .00 |
| 24 | 4.6 | 44 | 18 | 57 | 25 | 15 | 11 | 181 | 39 | .03 | .00 | .00 |
| 25 | 4.7 | 34 | 18 | 47 | 23 | 14 | 10 | 105 | 29 | .02 | .00 | .00 |
| 26 | 4.7 | 31 | 18 | 41 | 26 | 13 | 11 | 67 | 25 | .01 | .00 | .00 |
| 27 | 4.0 | 27 | 16 | 38 | 25 | 15 | 16 | 347 | 20 | .00 | .00 | .04 |
| 28 | 3.6 | 23 | 29 | 35 | 25 | 18 | 12 | 1280 | 17 | .00 | .00 | .66 |
| 29 | 3.6 | 20 | 23 | 31 | 23 | 16 | 12 | 393 | 15 | .00 | .00 | .17 |
| 30 | 8.1 | 19 | 22 | 28 | --- | 15 | 11 | 266 | 13 | .00 | .00 | .02 |
| 31 | 14 | --- | 20 | 21 | --- | 15 | --- | 462 | --- | .00 | .00 | --- |
| TOTAL | 317.3 | 989.5 | 546 | 1294 | 762 | 494 | 334.3 | 20382.4 | 1790 | 81.18 | .00 | 5.92 |
| MEAN | 10.2 | 33.0 | 17.6 | 41.7 | 26.3 | 15.9 | 11.1 | 657 | 59.7 | 2.62 | .000 | .20 |
| MAX | 93 | 215 | 29 | 256 | 35 | 20 | 17 | 7760 | 129 | 12 | .00 | 2.5 |
| MIN | 2.2 | 7.0 | 14 | 15 | 20 | 13 | 8.2 | 3.5 | 13 | .00 | .00 | .00 |
| AC-FT | 629 | 1960 | 1080 | 2570 | 1510 | 980 | 663 | 40430 | 3550 | 161 | .00 | 12 |

CAL YR 1979 TOTAL 77152.50 MEAN 211 MAX 8500 MIN 1.0 AC-FT 153000
WTR YR 1980 TOTAL 26996.60 MEAN 73.8 MAX 7760 MIN .00 AC-FT 53550

## 07308200 PEASE RIVER NEAR VERNON, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1967 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 03... | 1330 | 5.1 | 12100 | 21.0 | 2100 | 2000 | 590 | 160 | 2000 |
| NOV 15... | 0845 | 8.8 | 13400 | 5.0 | 2200 | 2100 | 640 | 150 | 2400 |
| DEC 27... | 1515 | 16 | 16400 | 11.5 | 2400 | 2300 | 700 | 160 | 2900 |
| FEB 05... | 1540 | 230 | 17000 | 13.0 | 2000 | 1900 | 580 | 140 | 3000 |
| MAR 20... | 1330 | 134 | 16500 | 15.0 | 2600 | 2500 | 740 | 180 | 2900 |
| APR 29... | 1430 | 11 | 15500 | 28.5 | 2500 | 2400 | 700 | 180 | 2600 |
| MAY 10... | 1345 | 3310 | 3740 | 18.0 | 730 | 610 | 240 | 31 | 510 |
| JUN 10... | 1400 | 71 | 6780 | -- | 1400 | 1300 | 410 | 100 | 970 |
| JUL 22... | 1130 | .13 | 13600 | 28.5 | 2700 | 2500 | 720 | 210 | 2300 |

| DATE | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 03... | 19 | 14 | 180 | 0 | 1700 | 3400 | .4 | 16 | 7970 |
| NOV 15... | 22 | 12 | 180 | 0 | 1800 | 3800 | .4 | 15 | 8910 |
| DEC 27... | 26 | 13 | 160 | 0 | 1800 | 5000. | .4 | 12 | 10700 |
| FEB 05... | 29 | 12 | 180 | 0 | 730 | 5200 | .3 | 9.1 | 9760 |
| MAR 20... | 25 | 14 | 160 | 0 | 2000 | 5000 | .3 | 8.3 | 10900 |
| APR 29... | 23 | 13 | 160 | 0 | 2000 | 4500 | .5 | 5.8 | 10100 |
| MAY 10... | 8.2 | 9.5 | 140 | 0 | 580 | 810 | .6 | 7.0 | 2260 |
| JUN 10... | 11 | 12 | 140 | 0 | 1200 | 1600 | .6 | 6.3 | 4370 |
| JUL 22... | 19 | 14 | 210 | 0 | 2000 | 4100 | .5 | 13 | 9460 |

## 07308500 RED RIVER NEAR BURKBURNETT, TX
(National stream-quality accounting network)

LOCATION.--Lat 34°06'36", long 98°31'53", Cotton County, Okla., Hydrologic Unit 11130102, on left bank at downstream side of bridge on U.S. Highways 277 and 281, 2.5 mi (4.0 km) northeast of Burkburnett, and at mile 933 (1,501 km).

DRAINAGE AREA.--20,570 mi² (53,280 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1924 to August 1925 (monthly discharge only), December 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 952.57 ft (290.343 m) National Geodetic Vertical Datum of 1929. July 11, 1924, to Aug. 31, 1925, nonrecording gage at site 1,000 ft (305 m) downstream at same datum. Dec. 16, 1959, to Jan. 11, 1960, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records fair. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--20 years (water years 1961-80), 884 ft³/s (25.03 m³/s), 640,500 acre-ft/yr (790 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,800 ft³/s (1,780 m³/s) Oct. 19, 1965, gage height, 11.46 ft (3.493 m); maximum gage height, 12.64 ft (3.853 m) July 27, 1975; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 3, 1957, reached a stage of 13.54 ft (4.127 m), from levels to floodmarks. According to local residents, higher stages occurred in 1891 and June 1941.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 9,000 ft³/s (255 m³/s) and maximum (*):

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| May 18 | 0930 | 38,100 | 1,080 | 11.79 | 3.594 |
| June 1 | 1300 | *42,200 | 1,200 | 12.11 | 3.691 |

Minimum discharge, 18.0 ft³/s (0.51 m³/s) Sept. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 105 | 342 | 235 | 247 | 208 | 203 | 159 | 370 | 37700 | 376 | 104 | 122 |
| 2 | 91 | 563 | 207 | 213 | 190 | 203 | 257 | 309 | 14400 | 357 | 98 | 139 |
| 3 | 79 | 496 | 198 | 195 | 204 | 204 | 355 | 236 | 4850 | 338 | 92 | 165 |
| 4 | 76 | 401 | 190 | 190 | 217 | 212 | 315 | 346 | 3370 | 325 | 98 | 170 |
| 5 | 79 | 309 | 178 | 186 | 227 | 207 | 242 | 354 | 2980 | 313 | 107 | 148 |
| 6 | 79 | 248 | 172 | 165 | 222 | 203 | 211 | 472 | 2850 | 344 | 119 | 130 |
| 7 | 72 | 208 | 173 | 154 | 214 | 197 | 164 | 322 | 2810 | 363 | 116 | 120 |
| 8 | 63 | 186 | 169 | 158 | 241 | 186 | 145 | 301 | 3030 | 363 | 104 | 117 |
| 9 | 61 | 170 | 165 | 158 | 257 | 181 | 132 | 309 | 3930 | 350 | 119 | 117 |
| 10 | 66 | 146 | 166 | 154 | 257 | 172 | 135 | 260 | 3610 | 338 | 119 | 103 |
| 11 | 80 | 138 | 155 | 150 | 279 | 164 | 116 | 212 | 2980 | 325 | 113 | 95 |
| 12 | 76 | 143 | 165 | 158 | 290 | 152 | 106 | 177 | 2760 | 307 | 122 | 89 |
| 13 | 60 | 128 | 174 | 154 | 313 | 154 | 101 | 130 | 2350 | 284 | 132 | 72 |
| 14 | 62 | 124 | 186 | 154 | 340 | 154 | 105 | 131 | 3970 | 273 | 129 | 58 |
| 15 | 81 | 120 | 204 | 154 | 352 | 158 | 113 | 1340 | 2860 | 262 | 116 | 53 |
| 16 | 94 | 119 | 204 | 154 | 315 | 159 | 111 | 12800 | 2300 | 247 | 110 | 45 |
| 17 | 137 | 117 | 213 | 158 | 317 | 144 | 105 | 27900 | 1970 | 227 | 110 | 42 |
| 18 | 214 | 115 | 217 | 154 | 307 | 147 | 111 | 33400 | 1660 | 204 | 116 | 40 |
| 19 | 226 | 111 | 195 | 158 | 284 | 139 | 116 | 10600 | 1510 | 190 | 136 | 37 |
| 20 | 169 | 162 | 186 | 162 | 269 | 130 | 116 | 4750 | 1380 | 178 | 174 | 33 |
| 21 | 129 | 331 | 182 | 1110 | 276 | 121 | 113 | 3820 | 1200 | 174 | 150 | 27 |
| 22 | 98 | 1320 | 182 | 1060 | 272 | 120 | 104 | 3000 | 1030 | 165 | 146 | 22 |
| 23 | 100 | 1590 | 195 | 915 | 246 | 133 | 98 | 2410 | 915 | 169 | 146 | 25 |
| 24 | 93 | 889 | 204 | 556 | 247 | 113 | 100 | 2510 | 854 | 174 | 174 | 25 |
| 25 | 87 | 534 | 208 | 449 | 241 | 110 | 119 | 1900 | 752 | 174 | 178 | 22 |
| 26 | 83 | 442 | 199 | 383 | 229 | 126 | 435 | 1470 | 659 | 168 | 143 | 19 |
| 27 | 82 | 353 | 195 | 313 | 229 | 147 | 1900 | 1150 | 574 | 165 | 126 | 51 |
| 28 | 78 | 277 | 247 | 279 | 228 | 190 | 1050 | 6430 | 496 | 178 | 110 | 79 |
| 29 | 76 | 245 | 370 | 257 | 208 | 200 | 669 | 17200 | 434 | 158 | 107 | 91 |
| 30 | 90 | 235 | 376 | 227 | --- | 177 | 488 | 20400 | 404 | 132 | 107 | 91 |
| 31 | 75 | --- | 296 | 213 | --- | 167 | --- | 27500 | --- | 116 | 107 | --- |
| TOTAL | 2961 | 10562 | 6406 | 9138 | 7479 | 5073 | 8291 | 182509 | 110588 | 7737 | 3828 | 2347 |
| MEAN | 95.5 | 352 | 207 | 295 | 258 | 164 | 276 | 5887 | 3686 | 250 | 123 | 78.2 |
| MAX | 226 | 1590 | 376 | 1110 | 352 | 212 | 1900 | 33400 | 37700 | 376 | 178 | 170 |
| MIN | 60 | 111 | 155 | 150 | 190 | 110 | 98 | 130 | 404 | 116 | 92 | 19 |
| AC-FT | 5870 | 20950 | 12710 | 18130 | 14830 | 10060 | 16450 | 362000 | 219400 | 15350 | 7590 | 4660 |

CAL YR 1979 TOTAL 293772 MEAN 805 MAX 19600 MIN 49 AC-FT 582700
WTR YR 1980 TOTAL 356919 MEAN 975 MAX 37700 MIN 19 AC-FT 707900

## 07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1968 to September 1974. Chemical, biochemical, and pesticide analyses: October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1968 to current year.
WATER TEMPERATURES: July 1968 to current year.

INSTRUMENTATION.--Continuous recording of specific conductance was discontinued on Sept 1979.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 17,400 micromhos July 30, 1972; minimum daily, 889 micromhos Sept. 24, 1970.
WATER TEMPERATURES (1968-80): Maximum daily, 35.5°C June 29, 1980; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 12,700 micromhos Feb. 26; minimum daily, 1,290 micromhos June 1.
WATER TEMPERATURES: Maximum daily, 35.5°C June 29; minimum daily 0.0°C on several days during January, February, and March.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>16... | 1215 | 95 | 8400 | 8.2 | 20.0 | 6.0 | 9.3 | 108 | 5.6 | 310 | 130 |
| NOV<br>05... | 1740 | 284 | 11500 | 8.0 | 15.5 | 500 | 9.0 | 96 | 4.2 | 2900 | 3300 |
| DEC<br>04... | 1040 | 190 | 6940 | 8.2 | 6.0 | 80 | 11.3 | 94 | 1.3 | 1800 | 1500 |
| JAN<br>15... | 0915 | 154 | 9550 | 8.2 | 10.0 | 3.8 | 10.4 | 99 | 1.7 | 55 | 38 |
| FEB<br>20... | 1010 | 242 | 11400 | 8.3 | 10.5 | 45 | 10.3 | 99 | 2.0 | K16 | 77 |
| MAR<br>18... | 0950 | 147 | 9900 | 8.2 | 7.0 | 11 | 11.3 | 97 | 5.7 | 1200 | K1800 |
| APR<br>22... | 0900 | 116 | 10300 | 8.0 | 17.0 | 6.5 | 8.2 | 89 | 5.6 | K5 | 65 |
| MAY<br>20... | 1010 | 2510 | 3090 | 7.9 | 21.0 | 230 | 7.5 | 87 | 3.6 | 1200 | 3700 |
| JUN<br>10... | 0920 | 3970 | 3180 | 8.2 | 23.0 | 170 | 7.4 | 80 | 2.8 | 2600 | 560 |
| JUL<br>22... | 1010 | 174 | 6080 | 8.0 | 27.0 | 27 | 7.5 | 97 | 4.0 | 21 | K9 |
| AUG<br>19... | 0930 | 136 | 5320 | 8.1 | 25.5 | 15 | 7.9 | 100 | 4.1 | 210 | K380 |
| SEP<br>16... | 0930 | 42 | 6200 | 7.9 | 22.5 | 15 | 8.0 | 98 | 3.6 | 42 | 130 |

| DATE | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>16... | 1600 | 1400 | 400 | 140 | 1300 | 14 | 13 | 170 | 0 | 1300 | 2200 |
| NOV<br>05... | 1500 | 1400 | 430 | 96 | 2100 | 24 | 21 | 140 | 0 | 1200 | 3400 |
| DEC<br>04... | 1300 | 1100 | 340 | 100 | 1100 | 13 | 10 | 240 | 0 | 950 | 1800 |
| JAN<br>15... | 1700 | 1500 | 420 | 150 | 1600 | 17 | 12 | 200 | 0 | 1300 | 2600 |
| FEB<br>20... | 1800 | 1600 | 490 | 140 | 2000 | 21 | 11 | 220 | 2 | 1400 | 3200 |
| MAR<br>18... | 1800 | 1600 | 440 | 160 | 1800 | 19 | 12 | 180 | 0 | 1400 | 2800 |
| APR<br>22... | 1800 | 1700 | 450 | 160 | 1800 | 19 | 12 | 160 | 0 | 1500 | 2800 |
| MAY<br>20... | 540 | 430 | 160 | 34 | 420 | 7.9 | 9.3 | 130 | 0 | 440 | 680 |
| JUN<br>10... | 610 | 480 | 170 | 45 | 390 | 6.9 | 9.3 | 170 | 0 | 400 | 650 |
| JUL<br>22... | 1200 | 1100 | 290 | 110 | 830 | 11 | 12 | 140 | 0 | 950 | 1300 |
| AUG<br>19... | 1200 | 1200 | 300 | 120 | 750 | 9.3 | 11 | 120 | 0 | 1100 | 1200 |
| SEP<br>16... | 1300 | 1200 | 310 | 120 | 910 | 11 | 7.1 | 140 | 0 | 1000 | 1600 |

## 07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 16... | .4 | 9.8 | 5490 | 5450 | .01 | .01 | .080 | .070 | 1.4 | .53 |
| NOV 05... | .4 | 8.2 | 7420 | 7330 | .64 | .62 | .350 | .190 | 2.5 | 2.4 |
| DEC 04... | .4 | 11 | 4520 | 4430 | .79 | .79 | .230 | .190 | 1.1 | .75 |
| JAN 15... | .4 | 3.0 | 6200 | 6180 | .07 | .06 | .120 | .100 | .36 | .31 |
| FEB 20... | .1 | 5.8 | 7590 | 7360 | .39 | .36 | .120 | .120 | 1.2 | .17 |
| MAR 18... | .4 | .6 | 6700 | 6700 | .00 | .00 | .170 | .120 | 1.0 | .86 |
| APR 22... | .5 | 2.4 | 6880 | 6800 | .02 | .02 | .170 | .130 | 1.0 | .65 |
| MAY 20... | .2 | 6.3 | 1870 | 1820 | .28 | .27 | .240 | .190 | 2.0 | .57 |
| JUN 10... | .3 | 10 | 1940 | 1750 | .61 | .38 | -- | -- | -- | -- |
| JUL 22... | .7 | 7.8 | 4040 | 3570 | .03 | .03 | .060 | .000 | 1.4 | .68 |
| AUG 19... | .6 | 8.3 | 3590 | 3550 | .30 | .00 | .170 | -- | -- | -- |
| SEP 16... | .5 | 11 | 4120 | 4030 | .00 | .00 | .040 | .020 | 1.3 | .60 |

| DATE | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | PHOS-PHORUS, DIS-SOLVED (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | CARBON, ORGANIC DIS-SOLVED (MG/L AS C) | CARBON, ORGANIC SUS-PENDED (MG/L AS C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 16... | 1.5 | .60 | .070 | .000 | 14 | -- | -- | -- | -- | -- |
| NOV 05... | 2.8 | 2.6 | .380 | .030 | 17 | -- | -- | 1020 | 782 | 90 |
| DEC 04... | 1.3 | .94 | .280 | .110 | 2.1 | -- | -- | 225 | 115 | 70 |
| JAN 15... | .48 | .41 | .070 | .030 | -- | 6.8 | -- | 25 | 10 | 79 |
| FEB 20... | 1.3 | .29 | .080 | .010 | 3.8 | -- | -- | 141 | 92 | 52 |
| MAR 18... | 1.2 | .98 | .110 | .030 | -- | 8.5 | 3.0 | 41 | 16 | 61 |
| APR 22... | 1.2 | .78 | .130 | .010 | 14 | -- | -- | 59 | 18 | 46 |
| MAY 20... | 2.2 | .76 | .360 | .040 | 42 | -- | -- | 4930 | 33400 | 46 |
| JUN 10... | -- | -- | .480 | .070 | -- | -- | -- | 1610 | 17300 | 42 |
| JUL 22... | 1.5 | .68 | .120 | .010 | -- | 6.2 | 4.0 | 293 | 138 | 29 |
| AUG 19... | -- | -- | .120 | .050 | -- | -- | -- | 45 | 17 | 92 |
| SEP 16... | 1.3 | .62 | .050 | .010 | -- | 10 | 3.3 | 36 | 4.1 | 96 |

## 07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUS-PENDED TOTAL (UG/L AS AS) | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) | BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) | CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC 04... | 1040 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 15... | 0915 | 2 | 0 | 2 | 300 | 100 | 200 | 1 | 1 | 0 | 10 |
| FEB 20... | 1010 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 18... | 0950 | 1 | 0 | 1 | 400 | 300 | 100 | 0 | 0 | 0 | 20 |
| JUN 10... | 0920 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL 22... | 1010 | 5 | 1 | 4 | 200 | 0 | 200 | 0 | 0 | 0 | 10 |
| AUG 19... | 0930 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 16... | 0930 | 6 | 2 | 4 | 200 | 0 | 200 | 0 | 0 | 0 | 10 |

| DATE | CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) | COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) | COBALT, DIS-SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) | COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, TOTAL RECOV-ERABLE (UG/L AS FE) | IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 15... | 0 | 10 | 0 | 0 | 0 | 6 | 6 | 0 | 210 | 180 | 30 |
| FEB 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 18... | 20 | 0 | 2 | 2 | 0 | 2 | 1 | 1 | 390 | 360 | 30 |
| JUN 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL 22... | 10 | 0 | 0 | 0 | 0 | 13 | 12 | 1 | 920 | 850 | 70 |
| AUG 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 16... | 10 | 0 | 1 | 1 | 0 | 3 | 3 | 0 | 450 | 430 | 20 |

| DATE | LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) | LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) | MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) | MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) | MERCURY DIS-SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) | NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 15... | 3 | 3 | 0 | 50 | 20 | 30 | .0 | .0 | .0 | 2 | 0 |
| FEB 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 18... | 3 | 3 | 0 | 50 | 10 | 40 | .1 | .1 | .0 | 4 | 4 |
| JUN 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL 22... | 6 | 6 | 0 | 150 | 140 | 10 | .4 | .0 | .4 | 6 | 2 |
| AUG 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 16... | 3 | 3 | 0 | 150 | 140 | 10 | .2 | .2 | .0 | 5 | 4 |

| DATE | NICKEL, DIS-SOLVED (UG/L AS NI) | SELE-NIUM, TOTAL (UG/L AS SE) | SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) | SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) | ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|---|---|---|
| DEC 04... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| JAN 15... | 5 | 4 | 1 | 3 | 0 | 0 | 0 | 30 | 10 | 20 |
| FEB 20... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| MAR 18... | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 20 | 0 | 20 |
| JUN 10... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| JUL 22... | 4 | 2 | 0 | 2 | 1 | 1 | 0 | 20 | 0 | 20 |
| AUG 19... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| SEP 16... | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 40 | 30 | 10 |

## 07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | PCB, TOTAL (UG/L) | PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | CHLORDANE, TOTAL (UG/L) | CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV | | | | | | | | | | | |
| 05... | 1740 | ND | -- | ND | -- | ND | -- | ND | -- | ND | -- |
| 05... | 1748 | -- | ND | -- | ND | -- | ND | -- | ND | -- | ND |
| FEB | | | | | | | | | | | |
| 20... | 1010 | ND | -- | ND | -- | ND | -- | ND | -- | ND | -- |

| DATE | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) | DIAZINON, TOTAL (UG/L) | DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) | DIELDRIN TOTAL (UG/L) | DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | ETHION, TOTAL (UG/L) | ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) | HEPTACHLOR, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV | | | | | | | | | | | |
| 05... | ND | -- | ND | -- | ND | -- | ND | -- | ND | -- | ND |
| 05... | -- | ND | -- | ND | -- | ND | -- | ND | -- | ND | -- |
| FEB | | | | | | | | | | | |
| 20... | ND | -- | ND | -- | ND | -- | ND | -- | ND | -- | ND |

| DATE | HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) | HEPTACHLOR EPOXIDE TOTAL (UG/L) | HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) | MALATHION, TOTAL (UG/L) | MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) | METHOXYCHLOR, TOTAL (UG/L) | METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) | METHYL PARATHION, TOTAL (UG/L) | METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV | | | | | | | | | | | |
| 05... | -- | ND | -- | ND | -- | ND | -- | ND | -- | ND | -- |
| 05... | ND | -- | ND | -- | ND | -- | ND | -- | ND | -- | ND |
| FEB | | | | | | | | | | | |
| 20... | -- | ND | -- | ND | -- | ND | -- | ND | -- | ND | -- |

| DATE | METHYL TRITHION, TOTAL (UG/L) | METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) | PARATHION, TOTAL (UG/L) | PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) | TOXAPHENE, TOTAL (UG/L) | TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) | TOTAL TRITHION (UG/L) | TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) | 2,4-D, TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) | SILVEX, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV | | | | | | | | | | | |
| 05... | ND | -- | ND | -- | ND | -- | ND | -- | ND | ND | ND |
| 05... | -- | ND | -- | ND | -- | ND | -- | ND | -- | -- | -- |
| FEB | | | | | | | | | | | |
| 20... | ND | -- | ND | -- | ND | -- | ND | -- | -- | -- | -- |

## 07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE | DEC 4,79 | MAR 18,80 | MAY 20,80 | JUN 10,80 |
|---|---|---|---|---|
| TIME | 1040 | 0950 | 1010 | 0920 |
| TOTAL CELLS/ML | 11000 | 13000 | 1500 | 24000 |
| DIVERSITY: DIVISION | 0.8 | 0.6 | 1.6 | 1.4 |
| .CLASS | 0.8 | 0.6 | 1.6 | 1.4 |
| ..ORDER | 1.4 | 0.7 | 1.7 | 2.1 |
| ...FAMILY | 1.5 | 1.2 | 2.1 | 3.0 |
| ....GENUS | 1.5 | 1.6 | 2.2 | 3.5 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | | | |
| .CHLOROPHYCEAE | | | | | | | | |
| ..CHLOROCOCCALES | | | | | | | | |
| ...CHARACIACEAE | | | | | | | | |
| ....SCHROEDERIA | -- | - | -- | - | -- | - | -- | - |
| ...COELASTRACEAE | | | | | | | | |
| ....COELASTRUM | -- | - | -- | - | -- | - | 700 | 3 |
| ...MICRACTINIACEAE | | | | | | | | |
| ....GOLENKINIA | -- | - | -- | - | -- | - | -- | - |
| ....MICRACTINIUM | -- | - | -- | - | -- | - | 700 | 3 |
| ...OOCYSTACEAE | | | | | | | | |
| ....ANKISTRODESMUS | 84 | 1 | 8100# | 64 | -- | - | 1600 | 7 |
| ....CHODATELLA | -- | - | -- | - | -- | - | -- | - |
| ....DICTYOSPHAERIUM | -- | - | 770 | 6 | -- | - | 5300# | 22 |
| ....KIRCHNERIELLA | -- | - | -- | - | -- | - | * | 0 |
| ....OOCYSTIS | -- | - | 97 | 1 | -- | - | 350 | 1 |
| ....SELENASTRUM | -- | - | -- | - | -- | - | -- | - |
| ....TETRAEDRON | -- | - | -- | - | -- | - | -- | - |
| ....TREUBARIA | -- | - | -- | - | -- | - | -- | - |
| ...SCENEDESMACEAE | | | | | | | | |
| ....SCENEDESMUS | 960 | 9 | 1500 | 12 | -- | - | 4100# | 17 |
| ....TETRASTRUM | -- | - | -- | - | -- | - | 350 | 1 |
| ..TETRASPORALES | | | | | | | | |
| ...COCCOMYXACEAE | | | | | | | | |
| ....ELAKATOTHRIX | -- | - | -- | - | -- | - | -- | - |
| ...PALMELLACEAE | | | | | | | | |
| ....GLOEOCYSTIS | -- | - | -- | - | -- | - | 700 | 3 |
| ..VOLVOCALES | | | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | | | |
| ....CHLAMYDOMONAS | 140 | 1 | 97 | 1 | 220 | 14 | 970 | 4 |
| ....PLATYMONAS | * | 0 | -- | - | -- | - | -- | - |
| CHRYSOPHYTA | | | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | | | |
| ..CENTRALES | | | | | | | | |
| ...CHAETOCERACEAE | | | | | | | | |
| ....CHAETOCEROS | -- | - | -- | - | -- | - | 180 | 1 |
| ...COSCINODISCACEAE | | | | | | | | |
| ....CYCLOTELLA | 280 | 3 | 1900# | 15 | 55 | 4 | 2200 | 9 |
| ....MELOSIRA | -- | - | -- | - | -- | - | 180 | 1 |
| ..PENNALES | | | | | | | | |
| ...CYMBELLACEAE | | | | | | | | |
| ....RHOPALODIA | -- | - | -- | - | 27 | 2 | -- | - |
| ...FRAGILARIACEAE | | | | | | | | |
| ....FRAGILARIA | -- | - | -- | - | -- | - | 180 | 1 |
| ....SYNEDRA | -- | - | -- | - | 27 | 2 | 180 | 1 |
| ...NAVICULACEAE | | | | | | | | |
| ....MASTOGLOIA | -- | - | -- | - | 27 | 2 | -- | - |
| ....NAVICULA | 56 | 1 | -- | - | 110 | 7 | -- | - |
| ...NITZSCHIACEAE | | | | | | | | |
| ....NITZSCHIA | 100 | 1 | 97 | 1 | 190 | 13 | 1400 | 6 |
| .CHRYSOPHYCEAE | | | | | | | | |
| ..CHRYSOMONADALES | | | | | | | | |
| ...OCHROMONADACEAE | | | | | | | | |
| ....OCHROMONAS | * | 0 | -- | - | -- | - | -- | - |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | | | |
| .CRYPTOPHYCEAE | | | | | | | | |
| ..CRYPTOMONADALES | | | | | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | | | | | |
| ....CHROOMONAS | -- | - | -- | - | -- | - | -- | - |
| ...CRYPTOMONADACEAE | | | | | | | | |
| ....CRYPTOMONAS | -- | - | -- | - | -- | - | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980---Continued

| DATE | DEC 4,79 | | MAR 18,80 | | MAY 20,80 | | JUN 10,80 | |
|---|---|---|---|---|---|---|---|---|
| TIME | 1040 | | 0950 | | 1010 | | 0920 | |
| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | | | |
| .CYANOPHYCEAE | | | | | | | | |
| ..CHROOCOCCALES | | | | | | | | |
| ...CHROOCOCCACEAE | | | | | | | | |
| ....AGMENELLUM | -- | - | -- | - | -- | - | -- | - |
| ....ANACYSTIS | 7500# | 70 | -- | - | -- | - | 3400 | 14 |
| ..HORMOGONALES | | | | | | | | |
| ...NOSTOCACEAE | | | | | | | | |
| ....ANABAENA | -- | - | -- | - | -- | - | -- | - |
| ....ANABAENOPSIS | -- | - | -- | - | -- | - | -- | - |
| ...OSCILLATORIACEAE | | | | | | | | |
| ....LYNGBYA | -- | - | -- | - | -- | - | -- | - |
| ....OSCILLATORIA | 1600 | 15 | -- | - | 820# | 54 | 1300 | 5 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | | | |
| .EUGLENOPHYCEAE | | | | | | | | |
| ..EUGLENALES | | | | | | | | |
| ...EUGLENACEAE | | | | | | | | |
| ....EUGLENA | * | 0 | -- | - | 27 | 2 | 350 | 1 |
| ....TRACHELOMONAS | * | 0 | -- | - | 27 | 2 | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE | JUL 22,80 | AUG 19,80 | SEP 16,80 |
|---|---|---|---|
| TIME | 1010 | 0930 | 0930 |
| TOTAL CELLS/ML | 410000 | 740000 | 380000 |
| DIVERSITY: DIVISION | 0.4 | 0.2 | 0.3 |
| .CLASS | 0.4 | 0.2 | 0.3 |
| ..ORDER | 0.9 | 0.3 | 1.2 |
| ...FAMILY | 1.1 | 0.5 | 1.4 |
| ....GENUS | 1.2 | 1.4 | 2.2 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | * | 0 | -- | - | -- | - |
| ...COELASTRACEAE | | | | | | |
| ....COELASTRUM | -- | - | * | 0 | 1900 | 1 |
| ...MICRACTINIACEAE | | | | | | |
| ....GOLENKINIA | -- | - | -- | - | * | 0 |
| ....MICRACTINIUM | * | 0 | -- | - | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | * | 0 | * | 0 | * | 0 |
| ....CHODATELLA | -- | - | * | 0 | * | 0 |
| ....DICTYOSPHAERIUM | 3300 | 1 | * | 0 | * | 0 |
| ....KIRCHNERIELLA | -- | - | -- | - | -- | - |
| ....OOCYSTIS | 5000 | 1 | * | 0 | 2600 | 1 |
| ....SELENASTRUM | * | 0 | * | 0 | -- | - |
| ....TETRAEDRON | * | 0 | -- | - | * | 0 |
| ....TREUBARIA | -- | - | -- | - | * | 0 |
| ...SCENEDESMACEAE | | | | | | |
| ....SCENEDESMUS | 10000 | 2 | 3800 | 1 | 3400 | 1 |
| ....TETRASTRUM | * | 0 | -- | - | -- | - |
| ..TETRASPORALES | | | | | | |
| ...COCCOMYXACEAE | | | | | | |
| ....ELAKATOTHRIX | -- | - | * | 0 | -- | - |
| ...PALMELLACEAE | | | | | | |
| ....GLOEOCYSTIS | -- | - | -- | - | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | -- | - | * | 0 |
| ....PLATYMONAS | -- | - | -- | - | -- | - |

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980--Continued

| DATE | JUL 22,80 | | AUG 19,80 | | SEP 16,80 | |
|---|---|---|---|---|---|---|
| TIME | 1010 | | 0930 | | 0930 | |
| TOTAL CELLS/ML | 410000 | | 740000 | | 380000 | |
| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...CHAETOCERACEAE | | | | | | |
| ....CHAETOCEROS | -- | - | -- | - | -- | - |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 4800 | 1 | * | 0 | 3000 | 1 |
| ....MELOSIRA | -- | - | -- | - | * | 0 |
| ..PENNALES | | | | | | |
| ...CYMBELLACEAE | | | | | | |
| ....RHOPALODIA | -- | - | -- | - | -- | - |
| ...FRAGILARIACEAE | | | | | | |
| ....FRAGILARIA | -- | - | -- | - | -- | - |
| ....SYNEDRA | * | 0 | -- | - | -- | - |
| ...NAVICULACEAE | | | | | | |
| ....MASTOGLOIA | -- | - | -- | - | -- | - |
| ....NAVICULA | * | 0 | -- | - | -- | - |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | * | 0 | * | 0 | * | 0 |
| .CHRYSOPHYCEAE | | | | | | |
| ..CHRYSOMONADALES | | | | | | |
| ...OCHROMONADACEAE | | | | | | |
| ....OCHROMONAS | -- | - | -- | - | -- | - |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | | | |
| ....CHROOMONAS | -- | - | * | 0 | -- | - |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | -- | - | -- | - | * | 0 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | 8000 | 2 | 6700 | 1 | 23000 | 6 |
| ....ANACYSTIS | 36000 | 9 | 6700 | 1 | 110000# | 29 |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENA | 5500 | 1 | * | 0 | -- | - |
| ....ANABAENOPSIS | -- | - | * | 0 | 6400 | 2 |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | 340000# | 46 | 75000# | 20 |
| ....OSCILLATORIA | 330000# | 80 | 360000# | 49 | 150000# | 39 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....EUGLENA | -- | - | * | 0 | -- | - |
| ....TRACHELOMONAS | -- | - | -- | - | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 2961 | 8280 | 5190 | 41500 | 2100 | 17100 | 1100 | 9070 | 1400 |
| NOV. | 1979 | 10562 | 5410 | 3340 | 95400 | 1300 | 38100 | 780 | 22300 | 990 |
| DEC. | 1979 | 6406 | 8760 | 5520 | 95400 | 2300 | 39600 | 1200 | 20500 | 1500 |
| JAN. | 1980 | 9138 | 7540 | 4720 | 117000 | 1900 | 48000 | 1000 | 25500 | 1300 |
| FEB. | 1980 | 7479 | 11000 | 7030 | 142000 | 3000 | 61000 | 1400 | 27900 | * |
| MAR. | 1980 | 5073 | 10200 | 6470 | 88600 | 2700 | 37600 | 1300 | 18000 | * |
| APR. | 1980 | 8291 | 7040 | 4400 | 98400 | 1800 | 40200 | 980 | 21900 | 1200 |
| MAY | 1980 | 182509 | 2150 | 1280 | 633000 | 480 | 236000 | 340 | 169600 | 440 |
| JUNE | 1980 | 110588 | 3340 | 2040 | 609000 | 800 | 238000 | 500 | 149700 | 640 |
| JULY | 1980 | 7737 | 6430 | 3970 | 83000 | 1600 | 33100 | 930 | 19500 | 1200 |
| AUG. | 1980 | 3828 | 5330 | 3260 | 33700 | 1300 | 13200 | 800 | 8250 | 1000 |
| SEPT | 1980 | 2347 | 5080 | 3100 | 19700 | 1200 | 7670 | 760 | 4840 | 970 |
| TOTAL | | 356919 | ** | ** | 2056000 | ** | 810000 | ** | 497000 | ** |
| WTD. AVG. | | 975 | 3480 | 2130 | ** | 840 | ** | 520 | ** | 650 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980 ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8940 | 5500 | 7570 | 8580 | 10000 | 11000 | 9600 | 7180 | 1290 | 8050 | 5980 | 5460 |
| 2 | 9000 | 3180 | 7990 | 8730 | 10200 | 10900 | 9590 | 7980 | 1430 | 8080 | 6330 | 4720 |
| 3 | 9110 | 3610 | 6900 | 9180 | 10000 | 10700 | 7220 | 8600 | 2000 | 7930 | 6550 | 4400 |
| 4 | 9220 | 7060 | 7240 | 9320 | 10400 | 10500 | 7600 | 7000 | 2360 | 6600 | 6600 | 4180 |
| 5 | 9200 | 11200 | 7930 | 9300 | 10000 | 10600 | 9340 | 6780 | 3340 | 6880 | 6700 | 3950 |
| 6 | 9220 | 9820 | 8480 | 9400 | 10600 | 10900 | 10500 | 7000 | 3580 | 7170 | 6390 | 4200 |
| 7 | 9150 | 8380 | 8640 | 9610 | 10400 | 10600 | 9300 | 5550 | 3700 | 7180 | 5930 | 4340 |
| 8 | 9250 | 8820 | 8730 | 9780 | 9780 | 10400 | 9170 | 6380 | 3620 | 7790 | 5700 | 4290 |
| 9 | 9380 | 9570 | 8930 | 9760 | 9420 | 10300 | 9740 | 7540 | 3060 | 6280 | 5520 | 4360 |
| 10 | 9400 | 9680 | 8890 | 9740 | 9350 | 10200 | 10400 | 9720 | 3220 | 6090 | 5400 | 4390 |
| 11 | 9320 | 9130 | 8980 | 9800 | 9170 | 10100 | 11000 | 8230 | 4440 | 5950 | 5300 | 4890 |
| 12 | 9280 | 8880 | 8660 | 9910 | 9540 | 9890 | 11400 | 7840 | 4700 | 5920 | 5050 | 4850 |
| 13 | 9360 | 9240 | 8720 | 9920 | 10000 | 9930 | 10400 | 8650 | 4370 | 5900 | 5030 | 5320 |
| 14 | 9420 | 9350 | 8750 | 9840 | 10100 | 9960 | 9620 | 9140 | 7220 | 5880 | 4970 | 5600 |
| 15 | 9240 | 9400 | 8660 | 9800 | 11600 | 10100 | 9590 | 4200 | 9820 | 5840 | 5070 | 6010 |
| 16 | 8600 | 9370 | 8790 | 9770 | 12000 | 9960 | 9660 | 1910 | 9540 | 5920 | 5330 | 6430 |
| 17 | 8100 | 9310 | 9230 | 9720 | 11800 | 10000 | 10000 | 1590 | 8070 | 5910 | 5440 | 6490 |
| 18 | 7890 | 9340 | 9480 | 9630 | 12000 | 10100 | 10300 | 1950 | 7210 | 5920 | 5370 | 6840 |
| 19 | 6370 | 9480 | 9720 | 9470 | 12000 | 10200 | 10200 | 2230 | 6760 | 6060 | 5430 | 6950 |
| 20 | 5590 | 9090 | 10000 | 8910 | 11800 | 10100 | 10300 | 3110 | 6420 | 6030 | 5270 | 7260 |
| 21 | 7000 | 5300 | 10700 | 5000 | 11700 | 9990 | 10300 | 3560 | 6490 | 5850 | 4740 | 7470 |
| 22 | 7240 | 4250 | 10800 | 3650 | 11800 | 10000 | 10400 | 4320 | 7140 | 5810 | 5100 | 7710 |
| 23 | 7670 | 3050 | 10300 | 4600 | 12000 | 9860 | 10500 | 4190 | 7480 | 5960 | 5060 | 7260 |
| 24 | 7780 | 3190 | 10200 | 5570 | 11800 | 9910 | 10600 | 5040 | 8080 | 5920 | 4820 | 7350 |
| 25 | 8230 | 3670 | 10200 | 7770 | 12000 | 9990 | 9480 | 5650 | 8160 | 5670 | 4520 | 7370 |
| 26 | 8780 | 3420 | 9830 | 9350 | 12700 | 10100 | 7500 | 6220 | 7730 | 5480 | 4370 | 7580 |
| 27 | 9050 | 3860 | 9780 | 9800 | 12300 | 9670 | 4800 | 6210 | 7900 | 5420 | 4560 | 5450 |
| 28 | 8950 | 5340 | 8770 | 10500 | 11700 | 9430 | 4650 | 2670 | 7940 | 5300 | 4860 | 5360 |
| 29 | 8930 | 6840 | 8300 | 10600 | 11400 | 9350 | 4550 | 1440 | 7790 | 5280 | 4970 | 5900 |
| 30 | 8610 | 7320 | 6780 | 10100 | --- | 9540 | 4850 | 1370 | 7910 | 5220 | 5470 | 5600 |
| 31 | 8940 | --- | 7040 | 10000 | --- | 9810 | --- | 1390 | --- | 5630 | 5570 | --- |
| MEAN | 8590 | 7190 | 8870 | 8940 | 11000 | 10100 | 9090 | 5310 | 5760 | 6220 | 5400 | 5730 |

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25.0 | 11.5 | 7.0 | 9.0 | 1.5 | .0 | 20.0 | 18.5 | 24.0 | 32.5 | 32.0 | 26.0 |
| 2 | 19.0 | 12.0 | 8.0 | 9.0 | 7.0 | .0 | 14.5 | 18.5 | 23.5 | 33.5 | 31.5 | 27.5 |
| 3 | 18.0 | 7.5 | 9.5 | 4.0 | 7.0 | 9.0 | 15.5 | 23.0 | 26.5 | 30.0 | 26.5 | 24.5 |
| 4 | 14.5 | 11.5 | 10.5 | 3.5 | 11.5 | 14.0 | 17.5 | 23.5 | 26.5 | 30.0 | 30.0 | 28.0 |
| 5 | 16.0 | 13.5 | 11.0 | 3.0 | 12.0 | 10.0 | 19.0 | 21.5 | 26.5 | 29.0 | 29.0 | 29.0 |
| 6 | 18.0 | 11.5 | 10.0 | 8.5 | 11.0 | 13.5 | 21.5 | 22.0 | 26.0 | 30.0 | 29.5 | 31.0 |
| 7 | 21.0 | 9.5 | 11.5 | 3.0 | 5.5 | 16.5 | 19.0 | 28.0 | 29.0 | 31.0 | 27.0 | 30.5 |
| 8 | 18.0 | 14.5 | 10.0 | 6.0 | 2.0 | 14.0 | 17.0 | 16.5 | 24.5 | 32.0 | 32.0 | 28.5 |
| 9 | 13.0 | 11.5 | 9.5 | 6.5 | .0 | 16.0 | 20.0 | 18.0 | 24.5 | 31.0 | 28.5 | 28.5 |
| 10 | 14.5 | 7.0 | 11.5 | 12.0 | .0 | 14.5 | 21.0 | 20.5 | 27.0 | 33.0 | 30.5 | 25.0 |
| 11 | 14.5 | 10.5 | 11.5 | 8.5 | 1.5 | 13.0 | 19.5 | 25.0 | 27.0 | 32.0 | 26.0 | 29.5 |
| 12 | 19.5 | 11.5 | 3.0 | 9.0 | 1.0 | 10.5 | 9.0 | 26.5 | 26.5 | 32.0 | 28.5 | 27.0 |
| 13 | 13.5 | 12.5 | 3.5 | 10.5 | 5.0 | 10.0 | 9.5 | 21.0 | 28.0 | 31.0 | 26.5 | 32.5 |
| 14 | 13.0 | 10.5 | 6.5 | 10.0 | 8.5 | 9.0 | 17.0 | 17.0 | 24.5 | 31.5 | 35.0 | 32.5 |
| 15 | 16.5 | 14.5 | 9.5 | 13.0 | 9.0 | 13.5 | 21.0 | 17.0 | 26.5 | 32.0 | 31.0 | 31.0 |
| 16 | 18.5 | 14.0 | 1.0 | 13.5 | .0 | 19.0 | 17.0 | 17.0 | 26.0 | 33.5 | 31.5 | 26.5 |
| 17 | 21.0 | 10.5 | 1.0 | 13.0 | 4.0 | 12.0 | 20.0 | 17.0 | 25.0 | 33.0 | 31.0 | 17.0 |
| 18 | 20.5 | 17.5 | 5.5 | 14.0 | 8.5 | 14.0 | 23.0 | 20.0 | 27.0 | 31.5 | 31.0 | 32.0 |
| 19 | 20.5 | 15.0 | 5.0 | 12.5 | 15.0 | 13.0 | 20.0 | 20.0 | 26.0 | 29.0 | 30.5 | 28.0 |
| 20 | 21.0 | 19.5 | 6.0 | 5.5 | 13.0 | 14.5 | 29.0 | 22.0 | 25.5 | 33.0 | 32.5 | 29.5 |
| 21 | 21.0 | 17.0 | 11.0 | 5.5 | 12.0 | 16.5 | 19.5 | 20.0 | 28.0 | 32.0 | 33.0 | 28.0 |
| 22 | 14.5 | 9.0 | 15.0 | 5.5 | 14.5 | 14.0 | 23.5 | 21.0 | 28.0 | 31.0 | 29.0 | 24.5 |
| 23 | 17.0 | 9.5 | 9.5 | 8.0 | 9.0 | 18.0 | 24.0 | 23.5 | 26.5 | 31.0 | 31.5 | 22.0 |
| 24 | 14.0 | 9.0 | 11.0 | 9.5 | 10.0 | 6.5 | 23.5 | 25.0 | 29.0 | 25.0 | 32.0 | 20.0 |
| 25 | 16.0 | 9.0 | 7.0 | 9.0 | 10.5 | 8.5 | 21.5 | 28.0 | 32.0 | 32.0 | 26.0 | 23.0 |
| 26 | 14.5 | 10.5 | 12.0 | 4.0 | 10.5 | 17.5 | 13.5 | 27.5 | 28.0 | 25.0 | 29.5 | 17.0 |
| 27 | 23.0 | 8.0 | 11.5 | 1.0 | 16.5 | 14.0 | 15.0 | 24.0 | 28.0 | 32.5 | 30.0 | 15.5 |
| 28 | 22.0 | 7.0 | 10.0 | .0 | 14.0 | 21.0 | 16.5 | 25.0 | 26.5 | 31.5 | 24.5 | 15.5 |
| 29 | 21.0 | 5.5 | 7.0 | .0 | 8.5 | 14.5 | 23.0 | 23.5 | 35.5 | 33.5 | 29.5 | 17.0 |
| 30 | 16.5 | 4.5 | 6.5 | .0 | --- | 16.5 | 18.5 | 22.5 | --- | 31.0 | 29.0 | 18.0 |
| 31 | 11.5 | --- | 4.0 | .0 | --- | 18.0 | --- | 25.0 | --- | 31.0 | 30.0 | --- |
| MEAN | 17.5 | 11.0 | 8.0 | 7.0 | 8.0 | 13.0 | 19.0 | 22.0 | 27.0 | 31.0 | 30.0 | 25.5 |

## 07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX

LOCATION.--Lat 33°57'02", long 100°03'52", Cottle County, Hydrologic Unit 11130204, near center of stream on downstream side of county bridge, 4 mi (6 km) downstream from Cottonwood Creek, 7 mi (11 km) downstream from Salt Creek, 10 mi (16 km) upstream from Middle Fork, 14 mi (23 km) southeast of Paducah, and 211.3 mi (340.0 km) upstream from mouth.

DRAINAGE AREA.--540 mi² (1,399 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1951-54 (occasional low-flow measurements), July 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,530 ft (466 m), from topographic map.

REMARKS.--Water discharge records good. One small diversion for irrigation above station.

AVERAGE DISCHARGE.--19 years (water years 1962-80), 20.4 ft³/s (0.578 m³/s), 0.51 in/yr (13 mm/yr), 14,780 acre-ft/yr (18.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,920 ft³/s (281 m³/s) Aug. 25, 1966, gage height, 15.3 ft (4.66 m), from floodmark; minimum, 0.3 ft³/s (0.008 m³/s) Sept. 1-4, 1964, gage height, 4.35 ft (1.326 m); minimum gage height, 2.50 ft (0.762 m) Aug. 28, 1978, and Aug. 19, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1908, 29.5 ft (8.99 m) in October 1955; flood in May or June 1956 reached a stage of 27 ft (8.2 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,000 ft³/s (142 m³/s), May 15 at 2400 hours, gage height, 11.41 ft (3.478 m), no other peak above base of 1,000 ft³/s (28.3 m³/s); minimum, 7.2 ft³/s (0.20 m³/s) Sept. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 12 | 13 | 12 | 11 | 11 | 12 | 13 | 18 | 11 | 9.8 | 8.1 |
| 2 | 12 | 12 | 13 | 12 | 11 | 11 | 12 | 13 | 22 | 11 | 9.8 | 8.7 |
| 3 | 11 | 13 | 13 | 12 | 11 | 12 | 12 | 12 | 19 | 11 | 10 | 11 |
| 4 | 12 | 13 | 13 | 12 | 11 | 11 | 12 | 12 | 18 | 10 | 10 | 9.2 |
| 5 | 12 | 13 | 13 | 12 | 11 | 11 | 12 | 12 | 18 | 11 | 10 | 9.1 |
| 6 | 12 | 12 | 13 | 12 | 11 | 11 | 12 | 12 | 18 | 10 | 9.8 | 9.1 |
| 7 | 12 | 13 | 13 | 12 | 11 | 11 | 12 | 24 | 17 | 10 | 9.6 | 8.8 |
| 8 | 12 | 13 | 13 | 12 | 12 | 11 | 12 | 121 | 42 | 9.9 | 9.5 | 9.2 |
| 9 | 11 | 13 | 13 | 12 | 11 | 11 | 12 | 23 | 96 | 9.8 | 9.6 | 12 |
| 10 | 11 | 13 | 13 | 12 | 12 | 11 | 12 | 16 | 29 | 9.7 | 9.6 | 12 |
| 11 | 12 | 13 | 12 | 11 | 12 | 12 | 12 | 14 | 140 | 9.9 | 10 | 11 |
| 12 | 12 | 13 | 13 | 12 | 11 | 11 | 11 | 13 | 142 | 10 | 10 | 9.8 |
| 13 | 12 | 13 | 13 | 12 | 12 | 11 | 12 | 12 | 32 | 9.9 | 10 | 9.4 |
| 14 | 12 | 13 | 14 | 12 | 11 | 11 | 12 | 12 | 21 | 9.9 | 10 | 9.3 |
| 15 | 12 | 13 | 13 | 12 | 11 | 12 | 12 | 1230 | 19 | 9.7 | 10 | 9.1 |
| 16 | 12 | 14 | 12 | 11 | 12 | 12 | 12 | 1960 | 18 | 9.2 | 11 | 9.2 |
| 17 | 12 | 14 | 12 | 11 | 12 | 11 | 12 | 83 | 15 | 9.2 | 9.2 | 8.6 |
| 18 | 13 | 14 | 12 | 11 | 12 | 12 | 12 | 36 | 24 | 9.2 | 8.8 | 9.2 |
| 19 | 12 | 13 | 12 | 13 | 12 | 11 | 12 | 28 | 24 | 9.2 | 8.5 | 9.4 |
| 20 | 12 | 61 | 12 | 15 | 12 | 11 | 13 | 24 | 25 | 9.2 | 8.5 | 9.1 |
| 21 | 12 | 77 | 12 | 16 | 11 | 12 | 13 | 283 | 17 | 8.8 | 13 | 9.0 |
| 22 | 11 | 23 | 12 | 14 | 12 | 12 | 12 | 58 | 16 | 9.4 | 13 | 8.6 |
| 23 | 12 | 16 | 14 | 12 | 11 | 12 | 12 | 29 | 15 | 9.5 | 8.8 | 9.1 |
| 24 | 12 | 15 | 12 | 11 | 11 | 11 | 13 | 23 | 14 | 9.8 | 8.5 | 9.6 |
| 25 | 12 | 14 | 12 | 11 | 11 | 12 | 13 | 20 | 13 | 10 | 8.1 | 9.5 |
| 26 | 12 | 14 | 11 | 11 | 11 | 12 | 149 | 18 | 12 | 11 | 8.1 | 11 |
| 27 | 12 | 14 | 11 | 11 | 11 | 12 | 21 | 17 | 12 | 10 | 8.1 | 15 |
| 28 | 12 | 13 | 12 | 11 | 12 | 12 | 15 | 31 | 11 | 10 | 8.5 | 14 |
| 29 | 12 | 13 | 12 | 11 | 11 | 12 | 13 | 19 | 11 | 10 | 8.8 | 12 |
| 30 | 16 | 13 | 12 | 11 | --- | 11 | 13 | 18 | 12 | 10 | 8.5 | 11 |
| 31 | 13 | --- | 12 | 11 | --- | 12 | --- | 18 | --- | 9.9 | 8.1 | --- |
| TOTAL | 374 | 520 | 387 | 370 | 330 | 355 | 514 | 4204 | 890 | 307.2 | 295.2 | 300.1 |
| MEAN | 12.1 | 17.3 | 12.5 | 11.9 | 11.4 | 11.5 | 17.1 | 136 | 29.7 | 9.91 | 9.52 | 10.0 |
| MAX | 16 | 77 | 14 | 16 | 12 | 12 | 149 | 1960 | 142 | 11 | 13 | 15 |
| MIN | 11 | 12 | 11 | 11 | 11 | 11 | 11 | 12 | 11 | 8.8 | 8.1 | 8.1 |
| AC-FT | 742 | 1030 | 768 | 734 | 655 | 704 | 1020 | 8340 | 1770 | 609 | 586 | 595 |

CAL YR 1979 TOTAL 9564.2 MEAN 26.2 MAX 961 MIN 9.0 AC-FT 18970
WTR YR 1980 TOTAL 8846.5 MEAN 24.2 MAX 1960 MIN 8.1 AC-FT 17550

## 07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1976.
Water temperatures: October 1967 to September 1976.
Sediment analyses: October 1977 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | TEMPER-ATURE, WATER (DEG C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. FALL DIAM. % FINER THAN .002 MM | SED. SUSP. FALL DIAM. % FINER THAN .004 MM | SED. SUSP. FALL DIAM. % FINER THAN .008 MM | SED. SUSP. FALL DIAM. % FINER THAN .016 MM | SED. SUSP. FALL DIAM. % FINER THAN .031 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FEB 04... | 1250 | 12 | 9.5 | 13 | .42 | -- | -- | -- | -- | -- | 79 | -- |
| MAR 19... | 1250 | 12 | 13.0 | 49 | 1.6 | -- | -- | -- | -- | -- | 90 | -- |
| APR 28... | 1230 | 14 | 18.0 | 173 | 6.5 | -- | -- | -- | -- | -- | 100 | -- |
| MAY 20... | 1400 | 25 | 22.0 | 48 | 3.2 | -- | -- | -- | -- | -- | -- | -- |
| JUN 09... | 1325 | 114 | 23.0 | 5680 | 1750 | 69 | 85 | 96 | 98 | 98 | 99 | 100 |
| JUL 21... | 1255 | 8.9 | 29.5 | 35 | .84 | -- | -- | -- | -- | -- | 96 | -- |
| SEP 01... | 1140 | 8.1 | 25.0 | 45 | .98 | -- | -- | -- | -- | -- | 98 | -- |

## 07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX

LOCATION.--Lat 33°49'14", long 99°47'10", Foard-Knox County line, Hydrologic Unit 11130204, near right bank on downstream side of bridge on State Highway 6, 4.5 mi (7.2 km) north of Truscott, about 47.6 mi (76.6 km) upstream from confluence with South Wichita River, and 188.4 mi (303.1 km) upstream from mouth.

DRAINAGE AREA.--937 $mi^2$ (2,427 $km^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-57 (occasional low-flow measurements), December 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,351.78 ft (412.023 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 2, 1960, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good. One small diversion for irrigation above station.

AVERAGE DISCHARGE.--20 years (water years 1961-80), 58.1 $ft^3/s$ (1.645 $m^3/s$), 0.84 in/yr (21 mm/yr), 42,090 acre-ft/yr (51.9 $hm^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,900 $ft^3/s$ (818 $m^3/s$) Sept. 19, 1965, gage height, 21.96 ft (6.693 m); minimum, 0.01 $ft^3/s$ (0.0003 $m^3/s$) July 25, 1964, and Aug. 22, 23, 1974.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900 occurred in September 1919; the next highest flood occurred in May 1954, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 $ft^3/s$ (28.3 $m^3/s$) and maximum (*):

| Date | Time | Discharge ($ft^3/s$) | Discharge ($m^3/s$) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| May 15 | 1700 | *9,050 | 256 | 18.50 | 5.639 |
| May 27 | 1715 | 1,060 | 30.0 | 10.18 | 3.103 |

Minimum discharge, 2.0 $ft^3/s$ (0.057 $m^3/s$) Jan. 31 (result of a freezeup).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 22 | 16 | 17 | 18 | 15 | 13 | 8.9 | 43 | 11 | 7.1 | 6.9 |
| 2 | 12 | 19 | 16 | 17 | 20 | 14 | 13 | 8.1 | 35 | 11 | 6.2 | 8.0 |
| 3 | 12 | 17 | 16 | 16 | 22 | 15 | 13 | 8.1 | 33 | 11 | 7.2 | 6.3 |
| 4 | 12 | 17 | 16 | 16 | 21 | 17 | 12 | 6.0 | 29 | 9.6 | 7.6 | 7.6 |
| 5 | 12 | 20 | 15 | 16 | 21 | 15 | 11 | 5.4 | 24 | 8.9 | 7.5 | 8.2 |
| 6 | 12 | 15 | 14 | 17 | 21 | 16 | 11 | 4.8 | 21 | 8.9 | 6.7 | 7.2 |
| 7 | 12 | 12 | 14 | 16 | 20 | 15 | 10 | 43 | 19 | 8.9 | 5.5 | 7.1 |
| 8 | 11 | 15 | 14 | 16 | 19 | 15 | 9.3 | 151 | 30 | 9.9 | 5.2 | 6.9 |
| 9 | 9.7 | 20 | 14 | 16 | 18 | 16 | 9.8 | 98 | 52 | 11 | 5.7 | 6.9 |
| 10 | 9.7 | 18 | 14 | 17 | 17 | 17 | 9.1 | 39 | 96 | 11 | 5.3 | 7.2 |
| 11 | 9.7 | 18 | 14 | 16 | 22 | 16 | 10 | 18 | 48 | 11 | 6.7 | 9.6 |
| 12 | 10 | 18 | 17 | 15 | 24 | 15 | 9.1 | 7.4 | 163 | 9.6 | 7.3 | 8.3 |
| 13 | 10 | 18 | 20 | 15 | 27 | 12 | 9.9 | 4.8 | 118 | 8.8 | 8.3 | 6.7 |
| 14 | 10 | 17 | 21 | 15 | 25 | 12 | 9.5 | 163 | 60 | 8.2 | 7.5 | 6.6 |
| 15 | 15 | 17 | 24 | 16 | 24 | 12 | 9.3 | 4430 | 42 | 9.0 | 7.3 | 6.3 |
| 16 | 13 | 16 | 24 | 16 | 22 | 13 | 8.1 | 4160 | 35 | 8.9 | 66 | 6.0 |
| 17 | 13 | 15 | 17 | 16 | 20 | 13 | 7.0 | 612 | 28 | 8.1 | 19 | 5.4 |
| 18 | 14 | 15 | 20 | 16 | 22 | 14 | 5.8 | 159 | 25 | 8.1 | 12 | 6.0 |
| 19 | 14 | 15 | 18 | 21 | 25 | 16 | 5.8 | 97 | 27 | 8.0 | 9.4 | 6.7 |
| 20 | 14 | 100 | 18 | 59 | 25 | 17 | 6.1 | 75 | 32 | 7.4 | 7.4 | 6.7 |
| 21 | 13 | 97 | 18 | 76 | 22 | 16 | 5.7 | 71 | 36 | 8.1 | 6.7 | 6.7 |
| 22 | 13 | 75 | 18 | 50 | 21 | 16 | 4.8 | 283 | 26 | 8.9 | 7.1 | 6.7 |
| 23 | 12 | 45 | 20 | 40 | 20 | 17 | 4.6 | 92 | 23 | 9.0 | 11 | 7.4 |
| 24 | 11 | 30 | 24 | 31 | 20 | 14 | 8.0 | 65 | 20 | 9.5 | 10 | 8.9 |
| 25 | 12 | 24 | 22 | 25 | 20 | 13 | 12 | 53 | 19 | 10 | 7.7 | 8.9 |
| 26 | 12 | 20 | 18 | 22 | 20 | 14 | 54 | 45 | 16 | 9.2 | 6.3 | 12 |
| 27 | 13 | 19 | 17 | 20 | 19 | 16 | 102 | 269 | 15 | 9.0 | 5.6 | 49 |
| 28 | 13 | 18 | 21 | 18 | 20 | 22 | 34 | 153 | 13 | 10 | 5.9 | 48 |
| 29 | 13 | 17 | 21 | 17 | 19 | 21 | 16 | 74 | 12 | 8.6 | 12 | 41 |
| 30 | 24 | 16 | 19 | 16 | --- | 19 | 9.7 | 77 | 12 | 7.9 | 9.9 | 27 |
| 31 | 21 | --- | 18 | 16 | --- | 16 | --- | 88 | --- | 7.6 | 9.4 | --- |
| TOTAL | 394.1 | 785 | 558 | 700 | 614 | 479 | 442.6 | 11368.5 | 1152 | 286.1 | 306.5 | 356.2 |
| MEAN | 12.7 | 26.2 | 18.0 | 22.6 | 21.2 | 15.5 | 14.8 | 367 | 38.4 | 9.23 | 9.89 | 11.9 |
| MAX | 24 | 100 | 24 | 76 | 27 | 22 | 102 | 4430 | 163 | 11 | 66 | 49 |
| MIN | 9.7 | 12 | 14 | 15 | 17 | 12 | 4.6 | 4.8 | 12 | 7.4 | 5.2 | 5.4 |
| CFSM | .01 | .03 | .02 | .02 | .02 | .02 | .02 | .39 | .04 | .01 | .01 | .01 |
| IN. | .02 | .03 | .02 | .03 | .02 | .02 | .02 | .45 | .05 | .01 | .01 | .01 |
| AC-FT | 782 | 1560 | 1110 | 1390 | 1220 | 950 | 878 | 22550 | 2280 | 567 | 608 | 707 |

CAL YR 1979 TOTAL 20111.4 MEAN 55.1 MAX 1900 MIN 3.8 AC-FT 39890
WTR YR 1980 TOTAL 17442.0 MEAN 47.7 MAX 4430 MIN 4.6 AC-FT 34600

## 07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1968 to current year.
WATER TEMPERATURES: July 1968 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 33,800 micromhos Aug. 19, 1970; minimum daily, 840 micromhos Sept. 23, 1969.
WATER TEMPERATURES (1968-80): Maximum daily, 39.0°C Aug. 21, 23, 1969, Aug. 22, 1973; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 26,500 micromhos Aug. 8; minimum daily, 1,000 micromhos May. 15.
WATER TEMPERATURES: Minimum daily 0.0°C Jan. 29

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 02... | 1415 | 12 | -- | -- | 24.5 | -- | -- | -- | -- | -- | -- |
| NOV 13... | 1155 | 18 | -- | -- | 8.0 | -- | -- | -- | -- | -- | -- |
| DEC 03... | 1015 | 16 | 18500 | -- | 3.5 | 2500 | 2400 | 720 | 170 | 3400 | 30 |
| JAN 15... | 1100 | 16 | 19900 | -- | 11.0 | 2800 | 2700 | 820 | 190 | 3700 | 30 |
| FEB 25... | 1050 | 20 | -- | -- | 7.5 | -- | -- | -- | -- | -- | -- |
| MAR 19... | 1055 | 14 | -- | -- | 10.5 | -- | -- | -- | -- | -- | -- |
| 19... | 1100 | 14 | 20900 | -- | 10.5 | 2900 | 2800 | 840 | 200 | 3700 | 30 |
| APR 07... | 1105 | 11 | -- | -- | 19.0 | -- | -- | -- | -- | -- | -- |
| 28... | 1030 | 36 | 5820 | 7.7 | 15.0 | 910 | 830 | 270 | 58 | 940 | 14 |
| MAY 15... | 1615 | 8650 | 662 | -- | 16.0 | 240 | 150 | 82 | 9.5 | 37 | 1.0 |
| 16... | 1120 | 4100 | -- | -- | 15.0 | -- | -- | -- | -- | -- | -- |
| 20... | 1130 | 80 | 9130 | -- | 22.0 | 1500 | 1300 | 420 | 100 | 1500 | 17 |
| JUN 09... | 1115 | 34 | 15900 | -- | 22.0 | 2500 | 2400 | 720 | 170 | 2800 | 24 |
| 30... | 1020 | 12 | -- | -- | 27.5 | -- | -- | -- | -- | -- | -- |
| JUL 21... | 1031 | 35 | 24700 | -- | 28.0 | 3800 | 3700 | 1100 | 260 | 4700 | 33 |
| AUG 12... | 0915 | 8.1 | -- | -- | 24.5 | -- | -- | -- | -- | -- | -- |
| SEP 01... | 0900 | 7.0 | -- | -- | 24.0 | -- | -- | -- | -- | -- | -- |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | SEDIMENT, SUSPENDED (MG/L) | SEDIMENT DISCHARGE, SUSPENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 02... | -- | -- | -- | -- | -- | -- | -- | -- | 23 | .75 | 95 |
| NOV 13... | -- | -- | -- | -- | -- | -- | -- | -- | 27 | 1.3 | 95 |
| DEC 03... | 17 | 180 | 0 | 2000 | 5700 | -- | 6.6 | 12100 | 43 | 1.9 | 98 |
| JAN 15... | 20 | 170 | 0 | 2300 | 5900 | -- | 5.1 | 13000 | -- | -- | -- |
| FEB 25... | -- | -- | -- | -- | -- | -- | -- | -- | 43 | 2.3 | 90 |
| MAR 19... | -- | -- | -- | -- | -- | -- | -- | -- | 14 | .53 | 95 |
| 19... | 33 | 150 | 0 | 2400 | 6600 | -- | 2.1 | 13900 | -- | -- | -- |
| APR 07... | -- | -- | -- | -- | -- | -- | -- | -- | 46 | 1.4 | 93 |
| 28... | 15 | 96 | 0 | 570 | 1600 | .4 | 4.4 | 3510 | 548 | 53 | 99 |
| MAY 15... | 5.1 | 120 | 0 | 150 | 51 | .5 | 8.8 | 403 | 5240 | 122000 | 98 |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | 5310 | 58800 | 90 |
| 20... | 18 | 170 | 0 | 1100 | 2400 | .5 | 5.9 | 5630 | 187 | 40 | 98 |
| JUN 09... | 18 | 130 | 0 | 2000 | 4700 | -- | 4.1 | 10500 | 211 | 19 | 100 |
| 30... | -- | -- | -- | -- | -- | -- | -- | -- | 153 | 5.0 | 99 |
| JUL 21... | 48 | 99 | 0 | 3300 | 8000 | -- | .3 | 17500 | 44 | 4.2 | 97 |
| AUG 12... | -- | -- | -- | -- | -- | -- | -- | -- | 17 | .37 | 91 |
| SEP 01... | -- | -- | -- | -- | -- | -- | -- | -- | 146 | 2.8 | 98 |

### 07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | TEMPERATURE, WATER (DEG C) | SEDIMENT, SUSPENDED (MG/L) | SEDIMENT DISCHARGE, SUSPENDED (T/DAY) | SED. SUSP. FALL DIAM. % FINER THAN .002 MM | SED. SUSP. FALL DIAM. % FINER THAN .004 MM |
|---|---|---|---|---|---|---|---|
| OCT | | | | | | | |
| 02... | 1415 | 12 | 24.5 | 23 | .75 | -- | -- |
| NOV | | | | | | | |
| 13... | 1155 | 18 | 8.0 | 27 | 1.3 | -- | -- |
| DEC | | | | | | | |
| 03... | 1015 | 16 | 3.5 | 43 | 1.9 | -- | -- |
| FEB | | | | | | | |
| 25... | 1050 | 20 | 7.5 | 43 | 2.3 | -- | -- |
| MAR | | | | | | | |
| 19... | 1055 | 14 | 10.5 | 14 | .53 | -- | -- |
| APR | | | | | | | |
| 07... | 1105 | 11 | 19.0 | 46 | 1.4 | -- | -- |
| 28... | 1030 | 36 | 15.0 | 548 | 53 | -- | -- |
| MAY | | | | | | | |
| 15... | 1615 | 8650 | 16.0 | 5240 | 122000 | -- | -- |
| 16... | 1120 | 4100 | 15.0 | 5310 | 58800 | 63 | 76 |
| 20... | 1130 | 80 | 22.0 | 187 | 40 | -- | -- |
| JUN | | | | | | | |
| 09... | 1115 | 34 | 22.0 | 211 | 19 | -- | -- |
| 30... | 1020 | 12 | 27.5 | 153 | 5.0 | -- | -- |
| JUL | | | | | | | |
| 21... | 1031 | 35 | 28.0 | 44 | 4.2 | -- | -- |
| AUG | | | | | | | |
| 12... | 0915 | 8.1 | 24.5 | 17 | .37 | -- | -- |
| SEP | | | | | | | |
| 01... | 0900 | 7.0 | 24.0 | 146 | 2.8 | -- | -- |

| DATE | SED. SUSP. FALL DIAM. % FINER THAN .008 MM | SED. SUSP. FALL DIAM. % FINER THAN .016 MM | SED. SUSP. FALL DIAM. % FINER THAN .031 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM |
|---|---|---|---|---|---|---|---|
| OCT | | | | | | | |
| 02... | -- | -- | -- | 95 | -- | -- | -- |
| NOV | | | | | | | |
| 13... | -- | -- | -- | 95 | -- | -- | -- |
| DEC | | | | | | | |
| 03... | -- | -- | -- | 98 | -- | -- | -- |
| FEB | | | | | | | |
| 25... | -- | -- | -- | 90 | -- | -- | -- |
| MAR | | | | | | | |
| 19... | -- | -- | -- | 95 | -- | -- | -- |
| APR | | | | | | | |
| 07... | -- | -- | -- | 93 | -- | -- | -- |
| 28... | -- | -- | -- | 99 | -- | -- | -- |
| MAY | | | | | | | |
| 15... | -- | -- | -- | 98 | -- | -- | -- |
| 16... | 83 | 86 | 90 | 90 | 91 | 94 | 100 |
| 20... | -- | -- | -- | 98 | -- | -- | -- |
| JUN | | | | | | | |
| 09... | -- | -- | -- | 100 | -- | -- | -- |
| 30... | -- | -- | -- | 99 | -- | -- | -- |
| JUL | | | | | | | |
| 21... | -- | -- | -- | 97 | -- | -- | -- |
| AUG | | | | | | | |
| 12... | -- | -- | -- | 91 | -- | -- | -- |
| SEP | | | | | | | |
| 01... | -- | -- | -- | 98 | -- | -- | -- |

## 07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 394.1 | 20700 | 14000 | 14900 | 6300 | 6740 | 2600 | 2780 | * |
| NOV. | 1979 | 785 | 13100 | 8610 | 18200 | 3800 | 7950 | 1700 | 3650 | * |
| DEC. | 1979 | 558 | 18700 | 12500 | 18900 | 5600 | 8400 | 2400 | 3620 | * |
| JAN. | 1980 | 700 | 16700 | 11100 | 20900 | 4900 | 9200 | 2200 | 4100 | * |
| FEB. | 1980 | 614 | 17500 | 11700 | 19300 | 5200 | 8540 | 2300 | 3760 | * |
| MAR. | 1980 | 479 | 20200 | 13600 | 17700 | 6100 | 7940 | 2600 | 3320 | * |
| APR. | 1980 | 442.6 | 13600 | 9070 | 10800 | 4000 | 4800 | 1800 | 2100 | * |
| MAY | 1980 | 11368.5 | 2270 | 1390 | 42700 | 550 | 16800 | 330 | 10000 | 390 |
| JUNE | 1980 | 1152 | 11900 | 7740 | 24100 | 3300 | 10400 | 1600 | 4920 | * |
| JULY | 1980 | 286.1 | 23000 | 15800 | 12200 | 7300 | 5620 | 2800 | 2200 | * |
| AUG. | 1980 | 306.5 | 21900 | 15000 | 12400 | 6900 | 5690 | 2700 | 2240 | * |
| SEPT | 1980 | 356.2 | 19700 | 13400 | 12900 | 6000 | 5810 | 2500 | 2390 | * |
| TOTAL | | 17442.0 | ** | ** | 225000 | ** | 97900 | ** | 45100 | ** |
| WTD. AVG. | | 48 | 7270 | 4780 | ** | 2100 | ** | 960 | ** | 1100 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20600 | 19800 | 18000 | 18900 | 18100 | 19800 | 20100 | 13000 | 10300 | 19500 | 25600 | 20600 |
| 2 | 20700 | 20400 | 18300 | 19200 | 17400 | 19700 | 20100 | 14700 | 13000 | 20000 | 25900 | 22800 |
| 3 | 20500 | 20700 | 18500 | 19300 | 16500 | 19600 | 20200 | 15600 | 14300 | 20300 | 25500 | 23300 |
| 4 | 20600 | 20800 | 18700 | 19500 | 18400 | 19500 | 20000 | 16800 | 15300 | 20600 | 25200 | 23800 |
| 5 | 20800 | 20000 | 19000 | 19400 | 18900 | 19800 | 20300 | 17700 | 15600 | 20800 | 25800 | 24600 |
| 6 | 20600 | 20600 | 19400 | 19200 | 19300 | 19900 | 20600 | 18300 | 16100 | 21100 | 26000 | 25000 |
| 7 | 20400 | 20700 | 19300 | 19400 | 19200 | 20000 | 20800 | 8530 | 16300 | 21400 | 26300 | 25200 |
| 8 | 20700 | 20200 | 19400 | 19600 | 18000 | 19800 | 21400 | 10700 | 14700 | 21800 | 26500 | 24600 |
| 9 | 21000 | 18000 | 19500 | 19800 | 18100 | 20000 | 21500 | 6750 | 16200 | 22300 | 25900 | 23900 |
| 10 | 20900 | 18600 | 19700 | 19500 | 17900 | 20000 | 21400 | 6260 | 18400 | 22400 | 26200 | 23200 |
| 11 | 21000 | 19000 | 19900 | 19700 | 17300 | 20100 | 21600 | 9690 | 19500 | 22600 | 25800 | 24700 |
| 12 | 20700 | 19600 | 19000 | 19800 | 18000 | 20100 | 21800 | 10800 | 4940 | 22700 | 25700 | 24800 |
| 13 | 20800 | 19900 | 18400 | 19900 | 13800 | 20200 | 21900 | 12200 | 2480 | 23000 | 25800 | 24200 |
| 14 | 21000 | 19700 | 18100 | 19700 | 12500 | 20300 | 21700 | 2530 | 5760 | 23400 | 25800 | 24000 |
| 15 | 19800 | 20000 | 18300 | 19900 | 10300 | 20400 | 21600 | 1000 | 8110 | 23600 | 25900 | 23500 |
| 16 | 20400 | 19900 | 18400 | 19700 | 14600 | 20300 | 21700 | 1270 | 9860 | 23900 | 15500 | 23600 |
| 17 | 20300 | 19800 | 18900 | 19500 | 16300 | 20500 | 21800 | 3500 | 11400 | 24100 | 16100 | 23900 |
| 18 | 20000 | 20000 | 18400 | 19600 | 17500 | 20600 | 21900 | 5660 | 12700 | 24300 | 15900 | 24000 |
| 19 | 20100 | 19900 | 19200 | 18700 | 18000 | 20800 | 22000 | 8020 | 14200 | 24500 | 18100 | 24200 |
| 20 | 20200 | 5980 | 19100 | 14300 | 18300 | 20600 | 21900 | 9420 | 15400 | 24600 | 20400 | 24500 |
| 21 | 21000 | 7500 | 19100 | 10300 | 18700 | 20800 | 21800 | 10300 | 16200 | 24700 | 22200 | 24900 |
| 22 | 20900 | 5500 | 19200 | 12800 | 18800 | 21000 | 22000 | 3500 | 17100 | 24500 | 23900 | 25100 |
| 23 | 21400 | 6080 | 18800 | 14800 | 19000 | 20800 | 21900 | 5340 | 17400 | 24400 | 24500 | 24300 |
| 24 | 21800 | 9610 | 18300 | 16700 | 19300 | 20600 | 21100 | 6960 | 16600 | 24400 | 25200 | 24100 |
| 25 | 21700 | 10400 | 18400 | 16900 | 19500 | 20700 | 19700 | 8580 | 15500 | 24500 | 25700 | 23900 |
| 26 | 21900 | 12400 | 18600 | 16400 | 19500 | 20800 | 7470 | 10200 | 15100 | 24600 | 25600 | 21500 |
| 27 | 21600 | 12900 | 18700 | 17000 | 19600 | 20600 | 3760 | 3170 | 16800 | 24400 | 25500 | 13000 |
| 28 | 21800 | 14600 | 17900 | 16500 | 19700 | 19800 | 6280 | 3620 | 17400 | 24200 | 25000 | 14100 |
| 29 | 21700 | 15700 | 18400 | 15800 | 19800 | 19900 | 8740 | 8500 | 18300 | 24500 | 24200 | 15600 |
| 30 | 19300 | 17200 | 18500 | 17900 | --- | 20000 | 11200 | 10400 | 19000 | 24900 | 24500 | 18700 |
| 31 | 20000 | --- | 18700 | 18100 | --- | 20000 | --- | 10300 | --- | 25200 | 24400 | --- |
| MEAN | 20800 | 16500 | 18800 | 18000 | 17700 | 20200 | 18900 | 8820 | 14100 | 23100 | 24000 | 22800 |

## 07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | --- | --- | --- | 1.5 | --- | 17.0 | --- | 27.0 | 31.5 | --- | 27.0 |
| 2 | | --- | 4.5 | 7.0 | 6.0 | --- | 14.0 | 23.0 | 27.5 | 29.5 | 27.5 | 30.5 |
| 3 | | --- | 7.0 | 6.0 | 8.5 | 7.0 | 16.0 | --- | 26.0 | --- | --- | 29.5 |
| 4 | | --- | 4.5 | --- | 11.5 | 11.5 | 19.5 | --- | 27.0 | --- | --- | 29.5 |
| 5 | | --- | --- | --- | 11.0 | 11.5 | 17.5 | 22.0 | 27.5 | 30.0 | --- | 28.0 |
| 6 | | 10.5 | 4.0 | --- | 10.0 | 14.0 | 20.0 | 22.0 | --- | --- | 29.0 | 26.5 |
| 7 | | 9.0 | 9.5 | 4.0 | 8.0 | 16.0 | 19.0 | 21.5 | --- | 29.5 | --- | 26.0 |
| 8 | | 10.5 | --- | 5.0 | 2.0 | 15.5 | 19.0 | 19.0 | 24.0 | 29.0 | --- | 27.5 |
| 9 | | 11.5 | 10.0 | 2.5 | --- | 12.5 | 20.5 | --- | 25.5 | 30.0 | --- | 26.0 |
| 10 | | --- | --- | 7.5 | 2.0 | 14.0 | 23.0 | 25.5 | 23.0 | --- | 27.5 | 27.5 |
| 11 | | --- | --- | 8.0 | 4.5 | 14.5 | --- | 26.0 | --- | --- | 27.0 | 29.0 |
| 12 | | 11.0 | --- | 8.0 | 8.0 | 16.0 | 10.0 | 24.5 | 28.0 | 33.0 | 26.0 | 30.5 |
| 13 | | 8.5 | --- | 11.5 | 10.5 | 14.0 | 9.5 | 24.0 | 25.0 | 31.0 | 32.5 | 31.0 |
| 14 | | 8.0 | 5.0 | 12.0 | 13.0 | 15.0 | --- | --- | 31.0 | --- | 30.5 | --- |
| 15 | | 11.5 | 8.0 | 12.0 | 9.5 | 18.0 | 22.0 | 16.0 | 29.5 | 34.5 | 26.0 | 27.0 |
| 16 | | 9.5 | 3.5 | 13.0 | --- | --- | --- | 15.5 | 32.0 | --- | 30.0 | --- |
| 17 | | --- | 2.0 | --- | --- | --- | 21.0 | --- | 33.0 | --- | 30.0 | --- |
| 18 | | --- | --- | 12.5 | 7.5 | 11.5 | 21.0 | 22.0 | 30.5 | --- | 32.0 | 27.5 |
| 19 | | 17.0 | 5.0 | 9.0 | --- | 11.0 | --- | 24.0 | --- | 32.5 | 27.0 | 31.5 |
| 20 | | 17.5 | 7.5 | 4.5 | 14.0 | 15.0 | 23.5 | 22.5 | --- | --- | 29.0 | --- |
| 21 | | 12.0 | 9.0 | 4.5 | 15.5 | 15.0 | 21.0 | 24.0 | 26.0 | --- | --- | --- |
| 22 | | 6.5 | 9.0 | 5.5 | 14.5 | 14.0 | 21.5 | --- | 32.0 | --- | 30.0 | --- |
| 23 | | 5.5 | 11.0 | 8.0 | 11.5 | 16.0 | 21.5 | 26.5 | 31.0 | 32.0 | 31.0 | 21.0 |
| 24 | | 10.0 | 9.5 | 9.5 | 10.5 | 15.0 | 23.0 | --- | --- | 31.5 | --- | 24.0 |
| 25 | | 9.5 | 7.5 | 10.0 | 11.0 | 14.5 | --- | --- | 27.0 | 33.5 | 32.5 | 23.0 |
| 26 | | --- | 9.0 | 3.0 | 12.5 | 16.0 | 16.0 | 22.5 | 34.0 | --- | 28.5 | 18.0 |
| 27 | | 11.0 | 10.0 | 1.5 | 15.0 | --- | 19.0 | --- | 28.5 | 30.5 | 31.0 | 16.0 |
| 28 | | 6.0 | 9.0 | --- | 17.5 | 20.0 | 24.0 | 27.0 | 34.0 | --- | 24.5 | 16.0 |
| 29 | | 1.5 | 7.0 | .0 | 9.0 | --- | 21.0 | 25.0 | --- | 28.0 | --- | 19.0 |
| 30 | | 4.0 | 3.0 | .5 | --- | 14.0 | 23.0 | 26.5 | 30.5 | 27.0 | --- | 24.0 |
| 31 | | --- | 6.0 | 2.5 | --- | 16.5 | --- | 25.0 | --- | --- | 28.0 | --- |
| MEAN | | 9.5 | 7.0 | 6.5 | 10.0 | 14.5 | 19.5 | 23.0 | 28.5 | 31.0 | 29.0 | 25.5 |

## 07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX

LOCATION.--Lat 33°38'39", long 99°48'02", Knox County, Hydrologic Unit 11130205, on right bank at upstream side of bridge on State Highway 6, 2 mi (3 km) downstream from Panhandle and Santa Fe Railway Co. bridge, 4 mi (6 km) north of Benjamin, and 41 mi (66 km) upstream from confluence with North Wichita River.

DRAINAGE AREA.--584 mi$^2$ (1,513 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-57 (occasional low-flow measurements), December 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,334.23 ft (406.673 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 2, 1960, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good. No known regulation or diversion above station.

AVERAGE DISCHARGE.--20 years (water years 1961-80), 37.5 ft$^3$/s (1.062 m$^3$/s), 0.87 in/yr (22 mm/yr), 27,170 acre-ft/yr (33.5 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft$^3$/s (368 m$^3$/s) Oct. 18, 1960, gage height, 15.40 ft (4.694 m); maximum gage height, 16.48 ft (5.023 m) Oct. 18, 1965; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1903 occurred in September 1919 (stage and discharge unknown), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft$^3$/s (22.7 m$^3$/s) and maximum (*):

| Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| May 15 | 1300 | *6,200 | 176 | 15.70 | 4.785 |
| May 27 | 1815 | 2,120 | 60.0 | 13.84 | 4.218 |
| Sept. 27 | 1000 | 1,010 | 78.6 | 10.00 | 3.048 |

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .99 | 2.5 | 6.5 | 4.8 | 5.3 | 4.7 | 3.8 | 32 | 2.0 | .00 | .00 |
| 2 | .00 | 1.1 | 2.4 | 5.7 | 7.0 | 5.3 | 78 | 4.0 | 26 | 1.7 | .00 | .00 |
| 3 | .00 | 1.2 | 3.6 | 5.0 | 6.4 | 5.8 | 9.3 | 3.9 | 23 | 1.1 | .00 | .00 |
| 4 | .00 | 1.8 | 2.9 | 4.9 | 5.7 | 5.4 | 5.1 | 4.3 | 19 | .88 | .00 | .00 |
| 5 | .00 | 1.8 | 3.3 | 4.9 | 5.2 | 4.8 | 4.2 | 4.4 | 18 | .68 | .00 | .00 |
| 6 | .00 | 1.6 | 2.6 | 6.0 | 5.1 | 5.2 | 4.0 | 4.9 | 17 | .50 | .00 | .00 |
| 7 | .00 | 1.8 | 3.0 | 4.9 | 5.7 | 5.1 | 3.5 | 4.2 | 15 | .34 | .00 | .00 |
| 8 | .00 | 2.3 | 2.7 | 4.9 | 7.0 | 5.1 | 2.8 | 4.5 | 21 | .23 | .00 | .00 |
| 9 | .00 | 2.1 | 3.0 | 4.8 | 6.1 | 5.1 | 3.1 | 3.8 | 16 | .15 | .00 | .44 |
| 10 | .00 | 1.9 | 3.3 | 5.8 | 6.0 | 5.1 | 3.2 | 3.5 | 18 | .03 | .00 | 2.4 |
| 11 | .00 | 2.5 | 3.6 | 4.8 | 8.0 | 4.7 | 2.6 | 3.3 | 17 | .01 | .00 | .96 |
| 12 | .00 | 3.0 | 5.8 | 4.4 | 8.0 | 4.7 | 2.5 | 4.6 | 16 | .01 | .00 | .03 |
| 13 | .00 | 3.2 | 6.2 | 6.0 | 8.3 | 4.1 | 2.7 | 3.1 | 15 | .00 | .00 | .04 |
| 14 | .00 | 4.0 | 6.3 | 5.7 | 8.3 | 4.2 | 3.1 | 38 | 12 | .00 | .00 | .03 |
| 15 | .00 | 2.9 | 6.7 | 5.7 | 8.0 | 4.3 | 3.3 | 2560 | 11 | .00 | 4.6 | .00 |
| 16 | .00 | 2.7 | 5.7 | 6.5 | 8.0 | 4.4 | 3.3 | 2190 | 10 | .00 | 100 | .00 |
| 17 | .00 | 2.8 | 5.8 | 6.1 | 8.0 | 4.0 | 3.1 | 792 | 8.3 | .00 | 1.8 | .00 |
| 18 | .00 | 2.8 | 6.4 | 6.1 | 8.0 | 4.1 | 3.3 | 175 | 8.0 | .00 | 1.5 | .00 |
| 19 | .00 | 3.5 | 5.6 | 6.2 | 7.6 | 4.1 | 2.8 | 100 | 6.4 | .00 | .02 | .00 |
| 20 | .00 | 161 | 5.5 | 26 | 6.7 | 3.9 | 2.8 | 74 | 5.3 | .00 | .00 | .00 |
| 21 | .13 | 58 | 5.0 | 18 | 6.7 | 3.5 | 2.8 | 63 | 4.9 | .00 | .00 | .00 |
| 22 | .26 | 9.8 | 5.6 | 13 | 6.4 | 3.7 | 2.7 | 51 | 4.6 | .05 | .00 | .00 |
| 23 | .15 | 5.8 | 6.4 | 12 | 6.4 | 4.2 | 2.8 | 47 | 4.3 | .00 | .00 | .00 |
| 24 | .11 | 4.6 | 6.0 | 9.8 | 6.0 | 3.7 | 2.9 | 43 | 4.0 | .00 | .00 | .00 |
| 25 | .20 | 3.8 | 5.3 | 7.1 | 6.0 | 3.6 | 2.7 | 37 | 3.8 | .00 | .00 | .00 |
| 26 | .24 | 3.3 | 6.1 | 5.5 | 5.3 | 3.8 | 2.6 | 39 | 3.5 | .00 | .00 | .00 |
| 27 | .32 | 2.8 | 5.4 | 4.9 | 5.5 | 4.4 | 2.8 | 565 | 3.1 | .00 | .00 | 464 |
| 28 | .39 | 2.2 | 10 | 4.8 | 5.5 | 5.1 | 3.2 | 100 | 2.9 | .00 | .00 | 174 |
| 29 | .40 | 2.3 | 8.7 | 4.7 | 5.5 | 5.1 | 4.6 | 45 | 2.5 | .00 | .01 | 46 |
| 30 | 1.3 | 2.3 | 6.0 | 4.6 | --- | 4.8 | 4.2 | 50 | 2.2 | .00 | .06 | 27 |
| 31 | 1.9 | --- | 5.8 | 4.5 | --- | 4.6 | --- | 48 | --- | .00 | .00 | --- |
| TOTAL | 5.40 | 299.89 | 157.2 | 219.8 | 191.2 | 141.2 | 178.7 | 7069.3 | 349.8 | 7.68 | 107.99 | 714.90 |
| MEAN | .17 | 10.0 | 5.07 | 7.09 | 6.59 | 4.55 | 5.96 | 228 | 11.7 | .25 | 3.48 | 23.8 |
| MAX | 1.9 | 161 | 10 | 26 | 8.3 | 5.8 | 78 | 2560 | 32 | 2.0 | 100 | 464 |
| MIN | .00 | .99 | 2.4 | 4.4 | 4.8 | 3.5 | 2.5 | 3.1 | 2.2 | .00 | .00 | .00 |
| CFSM | .000 | .02 | .009 | .01 | .01 | .008 | .01 | .39 | .02 | .000 | .006 | .04 |
| IN. | .00 | .02 | .01 | .01 | .01 | .01 | .01 | .45 | .02 | .00 | .01 | .05 |
| AC-FT | 11 | 595 | 312 | 436 | 379 | 280 | 354 | 14020 | 694 | 15 | 214 | 1420 |

CAL YR 1979 TOTAL 5149.37 MEAN 14.1 MAX 380 MIN .00 AC-FT 10210
WTR YR 1980 TOTAL 9443.06 MEAN 25.8 MAX 2560 MIN .00 AC-FT 18730

## 07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

## WATER-QUALITY RECORDS

**PERIOD OF RECORD.**--Chemical analyses: October 1967 to current year.

**PERIOD OF DAILY RECORD.**--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

**INSTRUMENTATION.**-Specific conductance is recorded continuously at this station.

**REMARKS.**--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

**EXTREMES FOR PERIOD OF DAILY RECORD.**--
SPECIFIC CONDUCTANCE: Maximum daily, 48,900 micromhos May 13, 1971; minimum daily, 901 micromhos Sept. 6, 1973.
WATER TEMPERATURES: Maximum daily, 38.0°C Sept. 7, 1969; minimum daily, 0.0°C on many days during winter months.

**EXTREMES FOR CURRENT YEAR.**--
SPECIFIC CONDUCTANCE: Maximum daily, 45,900 micromhos Oct. 25; minimum daily, 1,090 micromhos May 15.
WATER TEMPERATURES: Maximum daily, 31.0°C Aug. 17; minimum daily, 0.0°C on several days during winter months.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | 0900 | .15 | 44900 | 6.0 | 6100 | -- | 1600 | 520 | -- |
| NOV 13... | 0925 | 3.7 | 39400 | 6.5 | 5000 | 4900 | 1300 | 420 | 8000 |
| DEC 03... | 0900 | 3.6 | 32700 | 2.0 | 4400 | 4300 | 1200 | 330 | 6300 |
| JAN 15... | 0930 | 5.7 | 34600 | 10.5 | 4400 | 4300 | 1200 | 340 | 6700 |
| MAR 19... | 0900 | 4.1 | 38100 | 10.0 | 4800 | 4700 | 1300 | 380 | 7700 |
| APR 07... | 0915 | 3.8 | 37500 | 15.5 | 5100 | 4900 | 1400 | 380 | 7300 |
| MAY 20... | 0930 | 69 | 12200 | 20.5 | 2000 | 1900 | 600 | 130 | 2000 |
| SEP 27... | 0800 | 233 | 827 | 15.0 | -- | -- | -- | -- | -- |

| DATE | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| OCT 23... | -- | -- | -- | -- | 4100 | 15000 | -- | -- |
| NOV 13... | 49 | 54 | 84 | 0 | 2500 | 14000 | 1.1 | 26300 |
| DEC 03... | 42 | 38 | 110 | 0 | 3000 | 11000 | 2.1 | 21900 |
| JAN 15... | 44 | 41 | 150 | 0 | 3100 | 12000 | 2.2 | 23500 |
| MAR 19... | 48 | 46 | 160 | 0 | 2800 | 12000 | 2.4 | 24300 |
| APR 07... | 45 | 42 | 150 | 0 | 3200 | 13000 | 2.7 | 25400 |
| MAY 20... | 19 | 20 | 130 | 0 | 1500 | 3500 | 5.0 | 7820 |
| SEP 27... | -- | -- | -- | -- | 340 | 26 | -- | -- |

## 07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 5.40 | 43300 | 28900 | 422 | 15000 | 219 | 3300 | 48 | * |
| NOV. | 1979 | 299.89 | 14400 | 9530 | 7720 | 4600 | 3720 | 1700 | 1360 | * |
| DEC. | 1979 | 157.2 | 32100 | 21400 | 9060 | 10600 | 4520 | 3200 | 1340 | * |
| JAN. | 1980 | 219.8 | 30700 | 20400 | 12100 | 10100 | 6010 | 3100 | 1840 | * |
| FEB. | 1980 | 191.2 | 30400 | 20200 | 10400 | 10000 | 5170 | 3100 | 1590 | * |
| MAR. | 1980 | 141.2 | 36200 | 24100 | 9170 | 12200 | 4640 | 3300 | 1240 | * |
| APR. | 1980 | 178.7 | 22200 | 14800 | 7130 | 7500 | 3600 | 2000 | 963 | * |
| MAY | 1980 | 7069.3 | 3680 | 2420 | 46200 | 1100 | 21200 | 520 | 9930 | 690 |
| JUNE | 1980 | 349.8 | 21900 | 14500 | 13700 | 7000 | 6580 | 2600 | 2430 | * |
| JULY | 1980 | 7.68 | 30400 | 20200 | 419 | 10000 | 207 | 3100 | 64 | * |
| AUG. | 1980 | 107.99 | 5330 | 3500 | 1020 | 1600 | 461 | 800 | 233 | 1000 |
| SEPT | 1980 | 714.90 | 4270 | 2810 | 5420 | 1300 | 2470 | 620 | 1200 | 820 |
| TOTAL | | 9443.06 | ** | ** | 123000 | ** | 58800 | ** | 22200 | ** |
| WTD. AVG. | | 26 | 7280 | 4820 | ** | 2300 | ** | 870 | ** | 1200 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | --- | 38100 | 29400 | 26900 | 29400 | 27300 | 36800 | 43100 | 13200 | 30400 | --- | --- |
| 2 | --- | 16900 | 30100 | 30400 | 30900 | 33200 | 4100 | 42600 | 18600 | 30600 | --- | --- |
| 3 | --- | 22500 | 32600 | 32000 | 30300 | 34700 | 6130 | 43000 | 19600 | 30900 | --- | --- |
| 4 | --- | 27700 | 33000 | 32300 | 31100 | 34500 | 25200 | 40400 | 19800 | 30500 | --- | --- |
| 5 | --- | 35000 | 32800 | 32600 | 28000 | 35200 | 30100 | 40100 | 20700 | 30700 | --- | --- |
| 6 | --- | 42000 | 33000 | 32700 | 32700 | 34800 | 34000 | 40000 | 21900 | 30500 | --- | --- |
| 7 | --- | 40300 | 33100 | 33200 | 32600 | 35000 | 37500 | 40600 | 22400 | 29700 | --- | --- |
| 8 | --- | 41300 | 33400 | 33400 | 25300 | 35500 | 38800 | 38700 | 22200 | 29400 | --- | --- |
| 9 | --- | 40900 | 33200 | 33600 | 24600 | 35600 | 38500 | 38600 | 18300 | 29200 | --- | 28500 |
| 10 | --- | 40400 | 33700 | 33500 | 23800 | 36100 | 38300 | 39200 | 19700 | 28900 | --- | 26100 |
| 11 | --- | 39800 | 40600 | 33400 | 29800 | 35900 | 39200 | 39000 | 23200 | 28700 | --- | 18200 |
| 12 | --- | 39500 | 30600 | 34000 | 30300 | 36000 | 39900 | 40300 | 24300 | 28500 | --- | 10400 |
| 13 | --- | 39300 | 31100 | 34400 | 31000 | 37300 | 40100 | 41900 | 24700 | --- | --- | 12500 |
| 14 | --- | 39200 | 31400 | 34400 | 31100 | 37200 | 40300 | 10400 | 25000 | --- | --- | 14600 |
| 15 | --- | 39000 | 32000 | 34500 | 29900 | 37500 | 40800 | 1090 | 25100 | --- | 14900 | --- |
| 16 | --- | 38800 | 31800 | 34300 | 28000 | 37300 | 41400 | 2700 | 25700 | --- | 4690 | --- |
| 17 | --- | 38600 | 32700 | 34600 | 26100 | 37500 | 41800 | 2120 | 25900 | --- | 7270 | --- |
| 18 | --- | 38500 | 33800 | 34300 | 29700 | 38000 | 42200 | 5420 | 26000 | --- | 15300 | --- |
| 19 | --- | 38200 | 33300 | 34000 | 30500 | 38100 | 42000 | 8540 | 26200 | --- | 20400 | --- |
| 20 | --- | 8070 | 32700 | 25500 | 31300 | 38100 | 41900 | 11900 | 26300 | --- | --- | --- |
| 21 | 45500 | 8500 | 32900 | 27600 | 31600 | 38300 | 42000 | 14200 | 26500 | --- | --- | --- |
| 22 | 45100 | 13900 | 32800 | 27300 | 31700 | 38100 | 42100 | 16200 | 26600 | 21400 | --- | --- |
| 23 | 44900 | 24700 | 31600 | 29200 | 32500 | 38500 | 42200 | 17600 | 27400 | --- | --- | --- |
| 24 | 45200 | 25500 | 31800 | 30800 | 33300 | 37200 | 42500 | 19100 | 28000 | --- | --- | --- |
| 25 | 45900 | 26700 | 32900 | 31000 | 34000 | 37900 | 42800 | 20600 | 28800 | --- | --- | --- |
| 26 | 44800 | 27600 | 32900 | 31200 | 34200 | 38300 | 42700 | 21300 | 29000 | --- | --- | --- |
| 27 | 44000 | 28100 | 33100 | 30400 | 34000 | 37500 | 42500 | 4310 | 29200 | --- | --- | 2820 |
| 28 | 43900 | 27900 | 29200 | 30100 | 34200 | 35400 | 42700 | 7890 | 29600 | --- | --- | 3130 |
| 29 | 44500 | 28600 | 30100 | 31000 | 34300 | 36300 | 42800 | 18700 | 29800 | --- | 27500 | 11600 |
| 30 | 43700 | 30300 | 31000 | 31700 | --- | 37200 | 42900 | 15200 | 29900 | --- | 26300 | 21200 |
| 31 | 41500 | --- | 31200 | 32200 | --- | 37500 | --- | 13600 | --- | --- | --- | --- |
| MEAN | 44500 | 31500 | 32400 | 31800 | 30600 | 36400 | 37500 | 23800 | 24500 | 29200 | 16600 | 14900 |

## 07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | --- | 7.0 | 10.0 | 3.0 | .0 | 3.0 | 10.0 | --- | 23.0 | 25.5 | --- | --- |
| 2 | --- | 5.0 | 5.0 | 5.0 | .0 | 2.0 | 14.0 | --- | 22.0 | 26.5 | --- | --- |
| 3 | --- | 5.0 | 2.0 | 4.0 | 5.0 | 2.0 | 11.0 | 16.0 | 23.0 | 25.0 | --- | --- |
| 4 | --- | 7.0 | 6.0 | 5.0 | 5.0 | 5.0 | 10.0 | 18.0 | 22.0 | 25.0 | --- | --- |
| 5 | --- | 19.5 | 6.0 | 3.0 | 5.0 | 3.0 | 13.0 | 17.0 | 22.0 | 24.0 | --- | --- |
| 6 | --- | 18.0 | 4.0 | 4.0 | 3.0 | 4.0 | 13.0 | 20.0 | 22.5 | 25.0 | --- | --- |
| 7 | --- | 10.0 | 3.0 | .0 | 8.0 | 11.5 | 14.0 | 19.0 | 25.0 | 25.0 | --- | --- |
| 8 | --- | 9.0 | 4.0 | .0 | --- | 9.0 | 10.0 | 16.0 | 24.0 | 25.0 | --- | --- |
| 9 | --- | 12.0 | 5.0 | 1.0 | --- | 10.0 | 11.0 | 15.0 | 20.0 | 25.0 | --- | --- |
| 10 | --- | 6.0 | 7.0 | 7.0 | 5.0 | 9.5 | 13.0 | 18.0 | 22.0 | 25.0 | --- | 23.0 |
| 11 | --- | 8.0 | 8.0 | 6.0 | .0 | 11.0 | 13.0 | 19.0 | 23.0 | 25.0 | --- | 24.0 |
| 12 | --- | 8.0 | 4.0 | 5.0 | .0 | 10.5 | 9.0 | 21.5 | 23.0 | 23.0 | --- | 22.0 |
| 13 | --- | 6.5 | 3.5 | 7.0 | 5.0 | 8.0 | 8.0 | 17.0 | 22.0 | --- | --- | 24.0 |
| 14 | --- | 5.0 | 5.0 | 7.0 | 9.0 | 7.5 | 8.0 | 17.0 | 22.0 | --- | --- | 24.0 |
| 15 | --- | 7.0 | 5.0 | 10.5 | 9.0 | 10.0 | 10.0 | 18.0 | 23.0 | --- | --- | --- |
| 16 | --- | 5.0 | 4.0 | 7.0 | --- | 10.0 | 13.0 | 15.0 | 24.0 | --- | 25.0 | --- |
| 17 | --- | 8.0 | .0 | 6.0 | 3.0 | 7.0 | 15.0 | 17.0 | 25.0 | --- | 31.0 | --- |
| 18 | --- | 9.0 | 3.0 | 7.5 | 2.0 | 5.0 | 13.0 | 22.0 | 25.0 | --- | 25.0 | --- |
| 19 | --- | 12.0 | 3.0 | 14.0 | 8.0 | 9.0 | 14.0 | 19.0 | 25.0 | --- | 25.0 | --- |
| 20 | --- | 18.0 | 2.0 | 10.0 | 9.0 | 11.0 | 15.0 | 19.5 | 25.0 | --- | --- | --- |
| 21 | --- | 12.0 | 7.0 | 5.0 | 9.0 | 8.0 | 16.5 | 19.0 | 25.0 | --- | --- | --- |
| 22 | 9.0 | 8.0 | 8.0 | 5.0 | 10.0 | 12.0 | 17.5 | 18.0 | 25.0 | --- | --- | --- |
| 23 | 7.0 | 9.0 | 12.0 | .0 | 9.0 | 10.0 | 18.5 | 19.0 | 25.0 | --- | --- | --- |
| 24 | 7.0 | 7.0 | 5.0 | 4.0 | 9.0 | 6.0 | 19.0 | 21.5 | 25.0 | --- | --- | --- |
| 25 | 22.0 | 7.0 | 6.0 | 6.0 | 4.0 | 9.0 | 17.0 | 20.0 | 25.0 | --- | --- | --- |
| 26 | 10.0 | 5.0 | --- | 5.0 | 4.0 | 11.0 | 13.0 | 21.0 | 24.0 | --- | --- | --- |
| 27 | 11.5 | 7.0 | 9.0 | 7.0 | 7.0 | 15.0 | 13.0 | --- | 25.0 | --- | --- | --- |
| 28 | 10.0 | 3.0 | 9.0 | --- | 9.5 | 10.0 | 14.0 | 30.0 | 25.0 | --- | --- | --- |
| 29 | 11.0 | .0 | 6.0 | --- | 9.0 | 10.0 | 15.0 | 25.0 | 26.0 | --- | --- | --- |
| 30 | 21.0 | 5.0 | 4.0 | --- | --- | 10.0 | 19.0 | 30.0 | 24.0 | --- | --- | --- |
| 31 | 8.0 | --- | .0 | .0 | --- | 10.0 | --- | 24.0 | --- | --- | --- | --- |
| MEAN | 11.5 | 8.5 | 5.0 | 5.0 | 5.5 | 8.5 | 13.5 | 19.5 | 23.5 | 25.0 | 26.5 | 23.5 |

## 07312000 LAKE KEMP NEAR MABELLE, TX

LOCATION.--Lat 33°45'30", long 99°09'03", Baylor County, Hydrologic Unit 11130206, in outlet gate tower near center of dam on Wichita River, 6.2 mi (10.0 km) north of Mabelle, 13 mi (21 km) northeast of Seymour, and 126.7 mi (203.9 km) upstream from mouth.

DRAINAGE AREA.--2,086 mi² (5,403 km²).

PERIOD OF RECORD.--October 1922 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1972, nonrecording gage at different site and at datum 2.40 ft (0.732 m) higher.

REMARKS.--The lake is formed by a rolled earthfill dam 8,890 ft (2,710 m) long. The original dam was completed Aug. 25, 1923, but deliberate impoundment had begun Oct. 1, 1922. Enlargement of the dam was completed in November 1973. The uncontrolled emergency spillway, 3,000 ft (910 m) wide, is located approximately 600 ft (180 m) to right and slightly upstream from right end of dam. The controlled outlet works near center of dam consist of two hydraulically operated slide gates 5 ft 8 in by 13 ft (1.7 by 4 m) with a 13-foot-diameter (4.0 m) conduit and spillway basin. The dam and lake are owned by the city of Wichita Falls and the Wichita County Water Improvement District No. 2. Water is used for irrigation in the Wichita River Valley, oilfield operation, municipal, and industrial uses. The capacity table is based on a resurvey made in 1973. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 1,183.0 | - |
| Crest of spillway | 1,160.0 | 603,000 |
| Top of flood-control pool | 1,156.0 | 502,900 |
| Top of conservation pool | 1,144.0 | 268,000 |
| Lowest gated outlet (invert) | 1,090.0 | 1,400 |

COOPERATION.--Capacity table No. 4-C was furnished by the Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 420,900 acre-ft (519 hm³) June 30, 1941, elevation, 1,152.0 ft (351.13 m), present datum; minimum since first appreciable storage, 26,160 acre-ft (32.3 hm³) June 30, 1953, elevation, 1,108.0 ft (337.72 m), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 177,800 acre-ft (219 hm³) June 5 at 1000 hours, elevation, 1,137.17 ft (346.609 m); minimum, 97,440 acre-ft (120 hm³) Sept. 25, 26, elevation, 1,126.20 ft (343,266 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 1,126.0 | 96,310 | 1,134.0 | 148,900 |
| 1,128.0 | 108,000 | 1,136.0 | 166,200 |
| 1,130.0 | 120,400 | 1,138.0 | 186,700 |
| 1,132.0 | 133,800 | | |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 145200 | 134800 | 140100 | 143000 | 144900 | 146600 | 138300 | 130600 | 176600 | 161700 | 129800 | 107100 |
| 2 | 144500 | 134800 | 140100 | 143000 | 145100 | 146500 | 138300 | 130400 | 177100 | 160400 | 129000 | 106600 |
| 3 | 143700 | 134600 | 140000 | 143000 | 145200 | 146800 | 138700 | 130200 | 177300 | 159100 | 128100 | 105700 |
| 4 | 143000 | 134500 | 140200 | 143000 | 145200 | 146500 | 138800 | 129800 | 177400 | 157800 | 127100 | 105000 |
| 5 | 142600 | 134500 | 140100 | 143000 | 145400 | 146500 | 138800 | 129700 | 177400 | 156600 | 127100 | 104600 |
| 6 | 142000 | 134300 | 140100 | 143000 | 145200 | 146900 | 139000 | 129200 | 177400 | 155400 | 125300 | 104000 |
| 7 | 141500 | 134200 | 140000 | 142900 | 145600 | 146800 | 138600 | 129000 | 177300 | 154100 | 124400 | 103500 |
| 8 | 140900 | 134500 | 140000 | 142800 | 145600 | 146900 | 138600 | 129500 | 176900 | 152900 | 123700 | 103100 |
| 9 | 140000 | 134300 | 140000 | 142800 | 145600 | 147000 | 138500 | 129600 | 176400 | 151700 | 123100 | 102600 |
| 10 | 139300 | 134200 | 140300 | 143200 | 145600 | 146900 | 138700 | 129800 | 176000 | 150600 | 122600 | 102400 |
| 11 | 138800 | 134200 | 140000 | 143000 | 145700 | 146400 | 137500 | 129600 | 175400 | 149700 | 122100 | 102200 |
| 12 | 137900 | 134200 | 140200 | 143000 | 145800 | 146300 | 137000 | 129400 | 174500 | 148800 | 121600 | 101900 |
| 13 | 137400 | 134200 | 140200 | 143100 | 146000 | 145500 | 136400 | 128900 | 173500 | 147800 | 120900 | 101600 |
| 14 | 136800 | 134200 | 140300 | 143300 | 146300 | 144900 | 135700 | 129300 | 172700 | 146700 | 120200 | 101300 |
| 15 | 136600 | 134200 | 140300 | 143100 | 146300 | 144600 | 135100 | 133900 | 171800 | 145800 | 119700 | 101100 |
| 16 | 136700 | 134200 | 140000 | 143300 | 146400 | 143900 | 134700 | 141200 | 171000 | 144800 | 118800 | 100600 |
| 17 | 136700 | 134200 | 140100 | 143300 | 146300 | 143500 | 134100 | 150100 | 170100 | 143800 | 118200 | 100300 |
| 18 | 136600 | 134500 | 140200 | 143200 | 146700 | 142800 | 133800 | 159500 | 169200 | 142900 | 117400 | 99970 |
| 19 | 136700 | 134200 | 140300 | 143400 | 147100 | 142200 | 133500 | 163100 | 168800 | 142000 | 116700 | 99560 |
| 20 | 136600 | 136100 | 140300 | 143900 | 147200 | 141800 | 133200 | 164900 | 168800 | 141200 | 116000 | 99040 |
| 21 | 136700 | 139700 | 140500 | 144700 | 147200 | 141200 | 133000 | 166100 | 168800 | 140400 | 115200 | 98470 |
| 22 | 136100 | 140300 | 140400 | 145000 | 147100 | 140800 | 132600 | 166900 | 168700 | 139600 | 114600 | 97780 |
| 23 | 136100 | 140400 | 140800 | 145200 | 147100 | 140500 | 132300 | 168000 | 168700 | 138600 | 113900 | 97780 |
| 24 | 135800 | 140600 | 140800 | 145200 | 147100 | 139500 | 132900 | 168600 | 168200 | 137500 | 113200 | 97730 |
| 25 | 135700 | 140600 | 140900 | 145300 | 147100 | 139100 | 132600 | 169100 | 167600 | 136500 | 112400 | 97500 |
| 26 | 135500 | 140600 | 140900 | 145200 | 147100 | 138600 | 131900 | 169400 | 166800 | 135500 | 111700 | 97500 |
| 27 | 135500 | 140400 | 140900 | 144900 | 147200 | 138400 | 131500 | 169800 | 165800 | 134500 | 110800 | 104100 |
| 28 | 135300 | 140300 | 142400 | 145000 | 147100 | 138500 | 131300 | 172300 | 164900 | 133500 | 110000 | 111300 |
| 29 | 135000 | 140200 | 142900 | 145200 | 147100 | 138600 | 131200 | 174900 | 163800 | 132500 | 109200 | 114200 |
| 30 | 135700 | 140100 | 142900 | 144900 | --- | 138200 | 131200 | 175700 | 162900 | 131700 | 108600 | 114800 |
| 31 | 134900 | --- | 143000 | 144900 | --- | 138200 | --- | 176200 | --- | 130700 | 107800 | --- |
| MAX | 145200 | 140600 | 143000 | 145300 | 147200 | 147000 | 139000 | 176200 | 177400 | 161700 | 129800 | 114800 |
| MIN | 134900 | 134200 | 140000 | 142800 | 144900 | 138200 | 131200 | 128900 | 162900 | 130700 | 107800 | 97500 |
| (†) | 1132.15 | 1132.86 | 1133.24 | 1133.50 | 1133.78 | 1132.61 | 1131.62 | 1137.02 | 1135.64 | 1131.55 | 1127.97 | 1129.12 |
| (‡) | -10900 | +5200 | +2900 | +1900 | +2200 | -8900 | -7000 | +45000 | -13300 | -32200 | -22900 | +7000 |

CAL YR 1979 MAX 169800 MIN 134200 ‡ -10100
WTR YR 1980 MAX 177400 MIN 97500 ‡ -31000

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

## 07312100 WICHITA RIVER NEAR MABELLE, TX

LOCATION.--Lat 33°45'36", long 99°08'33", Baylor County, Hydrologic Unit 11130206, near left bank on downstream side of bridge on U.S. Highways 183 and 283, 0.3 mi (0.5 km) downstream from Lake Kemp Dam, 6.2 mi (10.0 km) north of Mabelle, and 13 mi (21 km) northeast of Seymour.

DRAINAGE AREA.--2,086 mi² (5,403 km²), all of which is above Lake Kemp Dam.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-58 (occasional discharge measurements), October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,062.72 ft (323.917 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow is regulated by Lake Kemp (see station 07312000). Water is released from Lake Kemp to supply Lake Diversion. Water from Lake Diversion is released for mining, industrial use, recreation, and irrigation in the vicinity of Wichita Falls.

AVERAGE DISCHARGE.--21 years, 146 ft³/s (4.135 m³/s), 105,800 acre-ft/yr (130 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,290 ft³/s (121 m³/s) Mar. 24, 1976, gage height, 10.47 ft (3.191 m); minimum daily, 0.15 ft³/s (0.004 m³/s) June 22, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,770 ft³/s (50.1 m³/s) Apr. 11 at 0945 hours, gage height, 6.61 ft (2.015 m); minimum, 0.34 ft³/s (0.010 m³/s) part of each day Feb. 20-22, Mar. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 228 | .64 | .53 | .58 | .75 | .51 | .82 | 138 | 1.3 | 439 | 326 | 317 |
| 2 | 228 | .64 | .48 | .53 | .70 | .49 | .89 | 138 | 1.2 | 507 | 345 | 320 |
| 3 | 229 | .64 | .48 | .52 | .64 | .51 | .81 | 138 | 1.2 | 508 | 360 | 320 |
| 4 | 228 | .64 | .48 | .48 | .67 | .52 | .85 | 138 | 1.2 | 508 | 360 | 306 |
| 5 | 228 | .64 | .53 | .48 | .69 | .50 | .76 | 137 | 1.2 | 508 | 359 | 210 |
| 6 | 227 | .64 | .48 | .51 | .63 | .57 | .70 | 135 | 12 | 507 | 358 | 209 |
| 7 | 226 | .64 | .48 | .48 | .64 | .60 | .68 | 136 | 133 | 505 | 359 | 209 |
| 8 | 227 | .70 | .48 | .48 | .66 | .61 | .60 | 136 | 134 | 503 | 305 | 209 |
| 9 | 230 | .64 | .48 | .50 | .61 | .59 | .63 | 135 | 207 | 508 | 219 | 209 |
| 10 | 226 | .64 | .48 | .47 | .59 | .62 | .64 | 135 | 262 | 427 | 218 | 146 |
| 11 | 226 | .59 | .53 | .45 | .59 | 151 | 222 | 135 | 285 | 367 | 217 | 106 |
| 12 | 226 | .64 | .59 | .43 | .48 | 235 | 290 | 133 | 384 | 367 | 217 | 105 |
| 13 | 228 | .64 | .52 | .59 | .49 | 235 | 289 | 134 | 384 | 367 | 217 | 105 |
| 14 | 225 | .64 | .52 | .92 | .48 | 234 | 287 | 135 | 384 | 367 | 285 | 105 |
| 15 | 149 | .64 | .50 | .88 | .48 | 234 | 287 | 59 | 385 | 367 | 323 | 106 |
| 16 | .91 | .64 | .57 | .90 | .54 | 238 | 287 | 1.9 | 387 | 367 | 322 | 107 |
| 17 | .77 | .64 | .58 | .94 | .44 | 239 | 199 | 1.5 | 387 | 367 | 323 | 107 |
| 18 | .70 | .64 | .63 | 1.0 | .70 | 237 | 140 | 1.5 | 387 | 354 | 323 | 107 |
| 19 | .70 | .64 | .63 | .91 | .52 | 237 | 140 | 1.5 | 391 | 335 | 322 | 175 |
| 20 | .64 | 4.0 | .64 | 1.2 | .45 | 237 | 138 | 1.5 | 180 | 335 | 321 | 210 |
| 21 | .64 | 4.7 | .63 | 1.2 | .40 | 237 | 138 | 1.5 | 2.4 | 335 | 322 | 210 |
| 22 | .64 | 1.4 | .61 | .93 | .45 | 237 | 138 | 1.4 | 2.0 | 335 | 322 | 212 |
| 23 | .64 | 1.3 | .71 | .95 | .44 | 236 | 138 | 1.3 | 1.7 | 380 | 321 | 84 |
| 24 | .59 | .84 | .53 | .91 | .46 | 238 | 139 | 1.3 | 148 | 453 | 320 | 2.1 |
| 25 | .59 | .84 | .52 | .90 | .49 | 237 | 139 | 1.3 | 238 | 452 | 320 | 2.0 |
| 26 | .59 | .84 | .54 | .88 | .50 | 240 | 139 | 1.3 | 238 | 449 | 319 | 2.0 |
| 27 | .59 | .77 | .56 | .84 | .62 | 185 | 138 | 1.4 | 311 | 449 | 319 | 31 |
| 28 | .59 | .70 | 4.1 | .84 | .52 | 1.3 | 138 | 1.3 | 354 | 448 | 320 | 15 |
| 29 | .59 | .64 | .77 | .77 | .53 | 1.6 | 138 | 1.3 | 355 | 439 | 319 | 3.2 |
| 30 | .64 | .53 | .61 | .77 | --- | .86 | 138 | 1.3 | 356 | 327 | 317 | 2.0 |
| 31 | .53 | --- | .59 | .77 | --- | .85 | --- | 1.3 | --- | 326 | 317 | --- |
| TOTAL | 3341.35 | 28.73 | 20.78 | 23.01 | 16.16 | 3897.13 | 3669.38 | 1984.6 | 6314.2 | 12906 | 9595 | 4251.3 |
| MEAN | 108 | .96 | .67 | .74 | .56 | 126 | 122 | 64.0 | 210 | 416 | 310 | 142 |
| MAX | 230 | 4.7 | 4.1 | 1.2 | .75 | 240 | 290 | 138 | 391 | 508 | 360 | 320 |
| MIN | .53 | .53 | .48 | .43 | .40 | .49 | .60 | 1.3 | 1.2 | 326 | 217 | 2.0 |
| AC-FT | 6630 | 57 | 41 | 46 | 32 | 7730 | 7280 | 3940 | 12520 | 25600 | 19030 | 8430 |

CAL YR 1979 TOTAL 37044.93 MEAN 101 MAX 797 MIN .47 AC-FT 73480
WTR YR 1980 TOTAL 46047.64 MEAN 126 MAX 508 MIN .40 AC-FT 91340

## 07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1966 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: October 1968 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 7,110 micromhos May 13, 14, 1980; minimum daily, 561 micromhos May 28, 1975.
WATER TEMPERATURES: Maximum daily, 32.0°C Sept. 6, 1972, June 26, July 5, 1975; minimum daily, 0.0°C Dec. 30, 1973, and Feb. 9, 17, 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 7,110 micromhos May 13, 14; minimum daily, 1,760 micromhos Sept. 28.
WATER TEMPERATURES: Maximum daily, 29.0°C July 23, 26-29; minimum daily, 0.0°C Feb. 9, 17.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | |
| 02... | 0800 | 146 | 6360 | 7.7 | 22.0 | 1100 | 1000 | 300 | 79 | 1000 |
| NOV | | | | | | | | | | |
| 27... | 0910 | .74 | 5800 | -- | 9.0 | 1200 | 1000 | 330 | 86 | 840 |
| JAN | | | | | | | | | | |
| 07... | 0915 | .69 | 5050 | -- | 6.5 | 1100 | 910 | 290 | 88 | 810 |
| FEB | | | | | | | | | | |
| 19... | 0900 | .61 | 5400 | -- | 9.0 | 980 | 820 | 250 | 86 | 760 |
| MAR | | | | | | | | | | |
| 21... | 1240 | .82 | 6290 | -- | 16.0 | 1100 | 980 | 310 | 85 | 890 |
| APR | | | | | | | | | | |
| 22... | 0800 | 138 | 6930 | -- | 15.0 | 1200 | 1100 | 330 | 82 | 1100 |
| MAY | | | | | | | | | | |
| 13... | 0750 | 136 | 7070 | 7.8 | 20.5 | 1100 | 1100 | 300 | 82 | 1200 |
| AUG | | | | | | | | | | |
| 05... | 0840 | 259 | 6530 | -- | 28.0 | 1100 | 1000 | 310 | 77 | 1000 |

| DATE | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | |
| 02... | 13 | 10 | 88 | 0 | 870 | 1700 | .3 | 7.9 | 4010 |
| NOV | | | | | | | | | |
| 27... | 11 | 10 | 200 | 0 | 780 | 1600 | .4 | 9.1 | 3550 |
| JAN | | | | | | | | | |
| 07... | 11 | 7.5 | 210 | 0 | 710 | 1600 | -- | 11 | 3620 |
| FEB | | | | | | | | | |
| 19... | 11 | 8.4 | 190 | 0 | 700 | 1300 | .4 | 7.4 | 3210 |
| MAR | | | | | | | | | |
| 21... | 12 | 9.4 | 170 | 0 | 760 | 1500 | .6 | 7.1 | 3650 |
| APR | | | | | | | | | |
| 22... | 16 | 11 | 110 | 0 | 930 | 1800 | .3 | 5.1 | 4310 |
| MAY | | | | | | | | | |
| 13... | 16 | 12 | 110 | 0 | 950 | 1900 | .5 | 6.8 | 4510 |
| AUG | | | | | | | | | |
| 05... | 13 | 11 | 110 | 0 | 730 | 1800 | .4 | 7.1 | 4260 |

## 07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 3341.35 | 6380 | 3720 | 33500 | 1600 | 14600 | 880 | 7960 | 1100 |
| NOV. | 1979 | 28.73 | 4820 | 2810 | 218 | 1200 | 92 | 660 | 51 | 870 |
| DEC. | 1979 | 20.78 | 5110 | 2980 | 167 | 1300 | 71 | 700 | 39 | 920 |
| JAN. | 1980 | 23.01 | 5800 | 3380 | 210 | 1400 | 90 | 800 | 50 | 1000 |
| FEB. | 1980 | 16.16 | 5720 | 3330 | 145 | 1400 | 62 | 790 | 34 | 1000 |
| MAR. | 1980 | 3897.13 | 6650 | 3870 | 40800 | 1700 | 17900 | 920 | 9690 | 1200 |
| APR. | 1980 | 3669.38 | 6890 | 4010 | 39800 | 1800 | 17600 | 960 | 9470 | 1200 |
| MAY | 1980 | 1984.6 | 7040 | 4100 | 22000 | 1800 | 9780 | 980 | 5240 | 1200 |
| JUNE | 1980 | 6314.2 | 6130 | 3570 | 60900 | 1500 | 26300 | 850 | 14400 | 1100 |
| JULY | 1980 | 12906 | 6370 | 3710 | 129000 | 1600 | 56400 | 880 | 30700 | 1100 |
| AUG. | 1980 | 9595 | 6700 | 3910 | 101000 | 1700 | 44500 | 930 | 24100 | 1200 |
| SEPT | 1980 | 4251.3 | 6900 | 4020 | 46200 | 1800 | 20500 | 960 | 11000 | 1200 |
| TOTAL | | 46047.64 | ** | ** | 475000 | ** | 208000 | ** | 113000 | ** |
| WTD. AVG. | | 126 | 6550 | 3820 | ** | 1700 | ** | 910 | ** | 1100 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6350 | 6080 | 5930 | 5680 | 6020 | 5440 | 6280 | 6970 | 6180 | 6200 | 6580 | 6850 |
| 2 | 6350 | 6060 | 5960 | 5730 | 6060 | 5750 | 6350 | 7020 | 6070 | 6220 | 6580 | 6870 |
| 3 | 6350 | 5940 | 5910 | 5750 | 6040 | 5780 | 6090 | 7040 | 6150 | 6220 | 6590 | 6890 |
| 4 | 6350 | 6090 | 5860 | 5710 | 6020 | 5860 | 6170 | 7070 | 6190 | 6230 | 6590 | 6890 |
| 5 | 6360 | 6110 | 5920 | 5800 | 5980 | 5800 | 6140 | 7070 | 6180 | 6260 | 6590 | 6910 |
| 6 | 6370 | 6120 | 5920 | 5890 | 5960 | 5800 | 6280 | 7070 | 6210 | 6270 | 6590 | 6920 |
| 7 | 6370 | 6080 | 5870 | 5880 | 6040 | 5820 | 6200 | 7070 | 6130 | 6290 | 6620 | 6960 |
| 8 | 6380 | 6210 | 5910 | 5880 | 5850 | 5830 | 6390 | 7030 | 6150 | 6300 | 6630 | 6960 |
| 9 | 6390 | 6040 | 5920 | 5880 | 5850 | 5800 | 6190 | 7070 | 6100 | 6300 | 6650 | 6980 |
| 10 | 6390 | 6130 | 5910 | 5880 | 5890 | 5810 | 6250 | 7020 | 6090 | 6320 | 6670 | 6980 |
| 11 | 6400 | 6240 | 5860 | 5930 | 5790 | 5790 | 6330 | 7070 | 6080 | 6320 | 6670 | 6980 |
| 12 | 6400 | 6000 | 5710 | 5910 | 5970 | 6620 | 6840 | 7080 | 6090 | 6350 | 6690 | 7000 |
| 13 | 6420 | 5950 | 5710 | 5900 | 5920 | 6660 | 6880 | 7110 | 6110 | 6360 | 6700 | 7000 |
| 14 | 6420 | 6060 | 5780 | 5930 | 5910 | 6660 | 6890 | 7110 | 6120 | 6360 | 6690 | 7020 |
| 15 | 6420 | 6080 | 5770 | 5990 | 5920 | 6660 | 6890 | 7060 | 6120 | 6370 | 6700 | 7000 |
| 16 | 6070 | 6080 | 5810 | 5930 | 5760 | 6670 | 6890 | 4680 | 6130 | 6380 | 6720 | 7030 |
| 17 | 6030 | 6070 | 5890 | 5920 | 5760 | 6670 | 6920 | 5100 | 6130 | 6390 | 6710 | 7030 |
| 18 | 6040 | 6030 | 5910 | 5980 | 5620 | 6680 | 6920 | 5500 | 6140 | 6430 | 6720 | 7030 |
| 19 | 6140 | 6070 | 5890 | 6090 | 5310 | 6690 | 6920 | 5420 | 6140 | 6410 | 6720 | 7020 |
| 20 | 6130 | 3500 | 5900 | 5980 | 5710 | 6700 | 6920 | 5510 | 6120 | 6410 | 6730 | 7070 |
| 21 | 6070 | 1780 | 5970 | 3780 | 5830 | 6700 | 6940 | 5530 | 6040 | 6430 | 6730 | 7080 |
| 22 | 6200 | 4590 | 5800 | 5730 | 5880 | 6680 | 6950 | 5660 | 6060 | 6440 | 6730 | 7090 |
| 23 | 6130 | 4530 | 5800 | 5760 | 5860 | 6700 | 6960 | 5810 | 6110 | 6460 | 6760 | 7070 |
| 24 | 6240 | 5570 | 5950 | 5870 | 5430 | 6710 | 6990 | 5980 | 6130 | 6480 | 6780 | 6500 |
| 25 | 6170 | 5610 | 5960 | 5920 | 4120 | 6710 | 6960 | 6050 | 6140 | 6470 | 6770 | 6550 |
| 26 | 6170 | 5700 | 5930 | 5960 | 5810 | 6710 | 6980 | 6120 | 6150 | 6510 | 6790 | 6470 |
| 27 | 6170 | 5770 | 5930 | 6010 | 5860 | 6720 | 6990 | 6110 | 6160 | 6500 | 6810 | 1750 |
| 28 | 6170 | 5850 | 2520 | 6050 | 4340 | 6190 | 7010 | 5970 | 6160 | 6510 | 6820 | 1740 |
| 29 | 6170 | 5920 | 4220 | 6030 | 4660 | 5840 | 6980 | 6130 | 6180 | 6540 | 6850 | 2880 |
| 30 | 6180 | 6080 | 4870 | 5980 | --- | 6350 | 7020 | 6050 | 6180 | 6550 | 6830 | 4490 |
| 31 | 6320 | --- | 5490 | 6010 | --- | 6320 | --- | 6050 | --- | 6570 | 6850 | --- |
| MEAN | 6260 | 5680 | 5670 | 5830 | 5700 | 6290 | 6680 | 6370 | 6130 | 6380 | 6710 | 6370 |

## 07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 23.0 | 10.0 | 5.0 | 8.0 | 3.0 | 2.0 | 11.0 | 18.0 | 23.0 | 28.0 | 27.0 | 26.0 |
| 2 | 22.0 | 11.0 | 6.0 | 9.0 | 7.0 | 3.0 | 14.0 | 18.0 | 23.0 | 28.0 | 27.0 | 26.0 |
| 3 | 23.0 | 10.0 | --- | 8.0 | 8.0 | 5.0 | 13.0 | 18.0 | 24.0 | 28.0 | 27.0 | 26.0 |
| 4 | 21.0 | 10.0 | 9.0 | 6.0 | 8.0 | 7.0 | 12.0 | 19.0 | 24.0 | 28.0 | 27.0 | 26.0 |
| 5 | 21.0 | 13.0 | 8.0 | 7.0 | 9.0 | 6.0 | 13.0 | 19.0 | 24.0 | 27.0 | 27.0 | 26.0 |
| 6 | 21.0 | 12.0 | 8.0 | 7.0 | 8.0 | 7.0 | 14.0 | 20.0 | 24.0 | 28.0 | 27.0 | 26.0 |
| 7 | 21.0 | 11.0 | 7.0 | 4.0 | 9.0 | 13.0 | 15.0 | 20.0 | 26.0 | 27.0 | 26.0 | 26.0 |
| 8 | 21.0 | 11.0 | 7.0 | 5.0 | 5.0 | 12.0 | 13.0 | 18.0 | 24.0 | 28.0 | 27.0 | 26.0 |
| 9 | 20.0 | 14.0 | 9.0 | 5.0 | .0 | 11.0 | 13.0 | 18.0 | 25.0 | 28.0 | 27.0 | 26.0 |
| 10 | 20.0 | 10.0 | 10.0 | 10.0 | 2.0 | 12.0 | 14.0 | 20.0 | 25.0 | 28.0 | 27.0 | 26.0 |
| 11 | 19.0 | 10.0 | 15.0 | 9.0 | 5.0 | 13.0 | 16.0 | 20.0 | 25.0 | 28.0 | 26.0 | 26.0 |
| 12 | 20.0 | 10.0 | 6.0 | 8.0 | 5.0 | 9.0 | 13.0 | 21.0 | 25.0 | 28.0 | 26.0 | 26.0 |
| 13 | 19.0 | 10.0 | 6.0 | --- | 7.0 | 9.0 | 13.0 | 21.0 | 25.0 | 28.0 | 27.0 | 26.0 |
| 14 | 19.0 | 10.0 | 7.0 | 9.0 | 11.0 | 9.0 | 13.0 | 21.0 | 25.0 | 28.0 | 27.0 | 26.0 |
| 15 | 19.0 | 10.0 | 9.0 | 12.0 | 12.0 | 10.0 | 14.0 | 20.0 | 25.0 | 28.0 | 28.0 | 27.0 |
| 16 | 19.0 | 10.0 | 7.0 | 10.0 | 1.0 | 11.0 | 15.0 | 16.0 | 25.0 | 28.0 | 26.0 | 26.0 |
| 17 | 20.0 | 10.0 | 2.0 | 10.0 | .0 | --- | 14.0 | 18.0 | 26.0 | 27.0 | 26.0 | 24.0 |
| 18 | 21.0 | 15.0 | 3.0 | 10.0 | 6.0 | 10.0 | 13.0 | 19.0 | 26.0 | 28.0 | 27.0 | 25.0 |
| 19 | 20.0 | 15.0 | 7.0 | 10.0 | 10.0 | 10.0 | 15.0 | 19.0 | 26.0 | 28.0 | 27.0 | 26.0 |
| 20 | 20.0 | 18.0 | 8.0 | 4.0 | 12.0 | 11.0 | 15.0 | 20.0 | 25.0 | 28.0 | 27.0 | 25.0 |
| 21 | 20.0 | 12.0 | 10.0 | 7.0 | 10.0 | 11.0 | 16.0 | 19.0 | 24.0 | 27.0 | 28.0 | 26.0 |
| 22 | 16.0 | 8.0 | 12.0 | 8.0 | 11.0 | 11.0 | 15.0 | 19.0 | 24.0 | 28.0 | 27.0 | 26.0 |
| 23 | 14.0 | 6.0 | 12.0 | 6.0 | 10.0 | 11.0 | 16.0 | 21.0 | 25.0 | 29.0 | 27.0 | 23.0 |
| 24 | 14.0 | 9.0 | 9.0 | 6.0 | 9.0 | 11.0 | 17.0 | 23.0 | 26.0 | 26.0 | 27.0 | 21.0 |
| 25 | 14.0 | 9.0 | 8.0 | 9.0 | 5.0 | 10.0 | 15.0 | 24.0 | 27.0 | 27.0 | 27.0 | 23.0 |
| 26 | 14.0 | 9.0 | 9.0 | 8.0 | 7.0 | 11.0 | 15.0 | 22.0 | 28.0 | 29.0 | 27.0 | 19.0 |
| 27 | 16.0 | 10.0 | 11.0 | 7.0 | 9.0 | 12.0 | 16.0 | 24.0 | 28.0 | 29.0 | 27.0 | 17.0 |
| 28 | 15.0 | 7.0 | 10.0 | 4.0 | 11.0 | 11.0 | 16.0 | 20.0 | 28.0 | 29.0 | 26.0 | 17.0 |
| 29 | 15.0 | 6.0 | 8.0 | 2.0 | 11.0 | 11.0 | 17.0 | 23.0 | 28.0 | 29.0 | 26.0 | 17.0 |
| 30 | 18.0 | 5.0 | 6.0 | 5.0 | --- | 10.0 | 17.0 | 23.0 | 28.0 | 27.0 | 26.0 | 19.0 |
| 31 | 10.0 | --- | 6.0 | 2.0 | --- | 10.0 | --- | 23.0 | --- | 27.0 | 26.0 | --- |
| MEAN | 18.5 | 10.5 | 8.0 | 7.0 | 7.5 | 9.5 | 14.5 | 20.0 | 25.5 | 28.0 | 27.0 | 24.0 |

## 07312110 SOUTH SIDE CANAL NEAR DUNDEE, TX

LOCATION.--Lat 33°48'50", long 98°55'57", Archer County, Hydrologic Unit 11130206, on left bank 125 ft (38 m) downstream from Lake Diversion headgates and 5.3 mi (8.5 km) northwest of Dundee.

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,039.70 ft (316.901 m) National Geodetic Vertical Datum of 1929 (Wichita County Water Improvement District bench mark).

REMARKS.--Records good. Water diverted from Lake Diversion is used for mining, industrial use, recreation, and irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years, 86.2 ft$^3$/s (2.441 m$^3$/s), 62,450 acre-ft/yr (77.4 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 374 ft$^3$/s (10.6 m$^3$/s) July 22, 1974; maximum gage height, 8.66 ft (2.640 m) July 23, 1978; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 138 | 2.5 | .59 | .50 | .73 | 87 | 45 | 114 | 55 | 252 | 289 | 254 |
| 2 | 146 | 2.3 | .64 | .51 | .81 | 5.1 | 45 | 113 | 55 | 253 | 291 | 257 |
| 3 | 147 | 2.2 | .64 | .53 | .71 | 31 | 44 | 113 | 55 | 256 | 291 | 259 |
| 4 | 146 | 2.1 | .54 | .51 | .60 | 50 | 45 | 113 | 54 | 259 | 294 | 262 |
| 5 | 146 | 2.0 | .55 | .49 | .63 | 51 | 45 | 112 | 55 | 261 | 296 | 250 |
| 6 | 146 | 1.7 | .58 | .48 | .74 | 56 | 44 | 112 | 72 | 262 | 299 | 236 |
| 7 | 147 | 1.7 | .58 | 14 | .65 | 58 | 43 | 111 | 85 | 266 | 300 | 236 |
| 8 | 147 | 1.6 | .60 | 26 | .64 | 52 | 43 | 93 | 87 | 266 | 300 | 236 |
| 9 | 146 | 1.6 | .64 | 1.0 | .60 | 65 | 43 | 75 | 104 | 271 | 300 | 236 |
| 10 | 146 | 1.4 | .68 | .98 | .58 | 79 | 44 | 74 | 118 | 275 | 299 | 217 |
| 11 | 147 | 1.5 | .68 | .75 | .81 | 102 | 63 | 74 | 124 | 276 | 297 | 203 |
| 12 | 152 | 1.4 | .69 | .72 | 1.0 | 101 | 82 | 80 | 140 | 278 | 298 | 181 |
| 13 | 154 | 1.3 | .64 | .71 | 1.0 | 101 | 81 | 109 | 140 | 277 | 297 | 155 |
| 14 | 154 | 1.2 | .66 | .72 | 1.0 | 104 | 80 | 124 | 143 | 277 | 296 | 154 |
| 15 | 140 | 1.2 | .64 | .74 | 1.0 | 102 | 82 | 82 | 146 | 278 | 295 | 154 |
| 16 | 109 | 1.1 | .64 | .79 | 1.0 | 86 | 82 | 8.1 | 154 | 278 | 298 | 151 |
| 17 | 109 | 1.0 | .77 | .77 | 1.1 | 86 | 81 | 8.1 | 169 | 278 | 300 | 150 |
| 18 | 108 | 1.1 | .63 | .73 | 1.1 | 90 | 83 | 8.1 | 183 | 277 | 301 | 149 |
| 19 | 108 | 1.1 | .53 | .72 | 1.2 | 90 | 84 | 8.1 | 199 | 278 | 283 | 148 |
| 20 | 106 | 1.1 | .53 | .70 | 1.1 | 88 | 85 | 8.1 | 194 | 279 | 253 | 147 |
| 21 | 106 | .95 | .53 | .76 | .70 | 92 | 97 | 8.1 | 166 | 279 | 253 | 147 |
| 22 | 103 | .82 | .53 | .72 | .54 | 93 | 111 | 8.1 | 166 | 298 | 254 | 158 |
| 23 | 104 | .67 | .49 | .77 | .52 | 91 | 110 | 8.1 | 166 | 312 | 253 | 170 |
| 24 | 89 | .57 | .48 | .77 | .49 | 91 | 111 | 8.1 | 173 | 297 | 253 | 163 |
| 25 | 76 | .58 | .46 | .76 | .42 | 95 | 111 | 8.1 | 194 | 282 | 254 | 153 |
| 26 | 75 | .58 | .48 | .81 | .43 | 95 | 109 | 11 | 210 | 282 | 254 | 134 |
| 27 | 74 | .64 | .49 | .73 | .48 | 103 | 111 | 48 | 209 | 286 | 253 | 106 |
| 28 | 72 | .64 | .53 | .66 | .50 | 67 | 112 | 73 | 209 | 286 | 283 | 7.6 |
| 29 | 70 | .62 | .53 | .66 | 44 | 42 | 112 | 96 | 210 | 288 | 294 | 5.1 |
| 30 | 68 | .59 | .50 | .61 | --- | 42 | 113 | 76 | 226 | 289 | 254 | 5.1 |
| 31 | 27 | --- | .53 | .60 | --- | 47 | --- | 55 | --- | 290 | 254 | --- |
| TOTAL | 3606 | 37.76 | 18.00 | 60.20 | 65.08 | 2342.1 | 2341 | 1939.0 | 4261 | 8586 | 8736 | 5083.8 |
| MEAN | 116 | 1.26 | .58 | 1.94 | 2.24 | 75.6 | 78.0 | 62.5 | 142 | 277 | 282 | 169 |
| MAX | 154 | 2.5 | .77 | 26 | 44 | 104 | 113 | 124 | 226 | 312 | 301 | 262 |
| MIN | 27 | .57 | .46 | .48 | .42 | 5.1 | 43 | 8.1 | 54 | 252 | 253 | 5.1 |
| AC-FT | 7150 | 75 | 36 | 119 | 129 | 4650 | 4640 | 3850 | 8450 | 17030 | 17330 | 10080 |

CAL YR 1979 TOTAL 23963.21 MEAN 65.7 MAX 229 MIN .39 AC-FT 47530
WTR YR 1980 TOTAL 37075.94 MEAN 101 MAX 312 MIN .42 AC-FT 73540

## 07312200 BEAVER CREEK NEAR ELECTRA, TX

LOCATION.--Lat 33°54'21", long 98°54'17", Wichita County, Hydrologic Unit 11130207, near right bank on downstream side of bridge on Farm Road 2326, 6.5 mi (10.5 km) northwest of Kamay, 8 mi (13 km) upstream from Wichita River, and 9 mi (14 km) south of Electra.

DRAINAGE AREA.--652 mi² (1,689 km²).

PERIOD OF RECORD.--February 1960 to current year.
Water-quality records: Chemical analyses: October 1968 to June 1970. Water temperatures: October 1968 to June 1970. Sediment records: April 1966 to September 1975.

GAGE.--Water-stage recorder. Datum of gage is 991.3 ft (302.15 m) National Geodetic Vertical Datum of 1929 (State Department of Highways and Public Transportation reference point).

REMARKS.--Records fair. Some regulation by Santa Rosa Lake, capacity 11,570 acre-ft (14.3 hm³), about 30 mi (48 km) upstream. Several small diversions above station.

AVERAGE DISCHARGE.--20 years, 56.0 ft³/s (1.586 m³/s), 1.17 in/yr (30 mm/yr), 40,570 acre-ft/yr (50.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s (331 m³/s) Mar. 17, 1961, gage height, 33.57 ft (10.232 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1925, 36.0 ft (10.97 m) probably occurred Oct. 2, 1941 (partly caused by deliberate demolition of Santa Rosa Dam to avoid its failure), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| Oct. 22 | 2000 | 1,090 | 30.9 | 17.54 | 5.346 |
| May 29 | 0715 | *2,700 | 76.5 | 25.06 | 7.638 |

Minimum daily discharge, 0.01 ft³/s (0.0003 m³/s) Aug. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.6 | 7.0 | 8.6 | 7.6 | .71 | .65 | .93 | 2.6 | 76 | 5.2 | 5.8 | 3.3 |
| 2 | 5.0 | 6.7 | 8.7 | 6.7 | .64 | .65 | 3.0 | 2.5 | 58 | 3.3 | 5.5 | 23 |
| 3 | 4.9 | 6.7 | 8.4 | 4.2 | .64 | .71 | 26 | 2.5 | 49 | 2.0 | 5.2 | 45 |
| 4 | 4.8 | 6.7 | 8.6 | 2.5 | .64 | .71 | 2.8 | 2.5 | 42 | 2.0 | 4.9 | 7.1 |
| 5 | 5.2 | 6.4 | 8.8 | 1.7 | .64 | .71 | 2.0 | 2.1 | 37 | 1.8 | 4.7 | 4.5 |
| 6 | 5.7 | 6.4 | 8.3 | 1.3 | .64 | .91 | 1.2 | 2.0 | 33 | 1.8 | 4.2 | 4.6 |
| 7 | 5.9 | 6.1 | 7.9 | 1.3 | .64 | .85 | .65 | 2.0 | 29 | 1.8 | 3.7 | 4.5 |
| 8 | 5.9 | 6.2 | 7.8 | 1.3 | 2.9 | .71 | .49 | 1.8 | 52 | 1.8 | 2.0 | 5.9 |
| 9 | 5.9 | 7.4 | 5.1 | 1.2 | 16 | 1.5 | .35 | 1.7 | 220 | 2.0 | 1.3 | 6.5 |
| 10 | 5.5 | 8.8 | 3.5 | .98 | 5.8 | 2.4 | .31 | 1.7 | 119 | 1.8 | .96 | 5.9 |
| 11 | 5.5 | 9.0 | 3.5 | .87 | 4.0 | 2.0 | 1.7 | 2.0 | 48 | 1.4 | 1.1 | 7.2 |
| 12 | 6.7 | 7.9 | 4.8 | 1.1 | 25 | 2.1 | 2.9 | 4.7 | 31 | .85 | 3.2 | 6.1 |
| 13 | 6.8 | 7.9 | 4.4 | 1.2 | 31 | 2.1 | 3.0 | 4.4 | 23 | .41 | 6.3 | 5.5 |
| 14 | 6.2 | 7.0 | 4.9 | .90 | 26 | 1.8 | 3.4 | 3.9 | 19 | .14 | 5.9 | 4.1 |
| 15 | 416 | 7.0 | 3.8 | .96 | 18 | 1.5 | 5.9 | 225 | 17 | .16 | 5.3 | 3.0 |
| 16 | 329 | 6.7 | 3.3 | 1.1 | 7.9 | 1.8 | 4.7 | 373 | 12 | .28 | 5.9 | 2.6 |
| 17 | 49 | 6.7 | 2.9 | 1.2 | 2.6 | 1.7 | 3.2 | 93 | 7.9 | .36 | 7.2 | 2.6 |
| 18 | 16 | 7.0 | 2.4 | 1.3 | 7.0 | 1.7 | 3.2 | 26 | 5.3 | .78 | 8.1 | 2.4 |
| 19 | 9.9 | 6.5 | 2.5 | 1.2 | 74 | 1.4 | 4.0 | 10 | 36 | 2.2 | 4.5 | 1.9 |
| 20 | 8.1 | 34 | 2.5 | 20 | 39 | 1.4 | 2.9 | 251 | 28 | 2.5 | 3.8 | 1.7 |
| 21 | 7.0 | 415 | 2.4 | 63 | 10 | 1.4 | 2.4 | 507 | 18 | 2.8 | 1.7 | 1.7 |
| 22 | 6.0 | 212 | 2.4 | 44 | 3.1 | 1.3 | 2.2 | 358 | 4.9 | 3.3 | .59 | 1.8 |
| 23 | 6.7 | 40 | 7.3 | 18 | 1.6 | 1.4 | 2.1 | 173 | 3.6 | 3.5 | .14 | 2.3 |
| 24 | 7.0 | 19 | 4.9 | 6.1 | 1.1 | 1.5 | 25 | 89 | 3.5 | 4.4 | .01 | 2.4 |
| 25 | 7.1 | 11 | 3.0 | 3.0 | .83 | 1.6 | 68 | 52 | 4.7 | 5.2 | 4.6 | 2.5 |
| 26 | 7.0 | 8.5 | 2.6 | 2.3 | .68 | 1.7 | 13 | 35 | 3.2 | 5.2 | .85 | 3.1 |
| 27 | 6.7 | 7.9 | 2.4 | 1.5 | .64 | 1.4 | 7.0 | 91 | 1.4 | 6.1 | .17 | 202 |
| 28 | 6.5 | 8.5 | 80 | 1.3 | .62 | 6.0 | 6.1 | 1850 | 5.5 | 6.7 | .44 | 260 |
| 29 | 6.2 | 8.5 | 85 | 1.0 | .55 | 2.0 | 5.2 | 2050 | 1.8 | 6.7 | 15 | 81 |
| 30 | 7.3 | 8.5 | 37 | .93 | --- | 2.0 | 3.7 | 247 | 2.4 | 6.4 | 6.9 | 22 |
| 31 | 8.2 | --- | 14 | .93 | --- | 1.1 | --- | 114 | --- | 6.1 | 4.0 | --- |
| TOTAL | 983.3 | 907.0 | 351.7 | 200.67 | 282.87 | 48.70 | 207.33 | 6580.4 | 991.2 | 88.98 | 123.96 | 726.2 |
| MEAN | 31.7 | 30.2 | 11.3 | 6.47 | 9.75 | 1.57 | 6.91 | 212 | 33.0 | 2.87 | 4.00 | 24.2 |
| MAX | 416 | 415 | 85 | 63 | 74 | 6.0 | 68 | 2050 | 220 | 6.7 | 15 | 260 |
| MIN | 4.8 | 6.1 | 2.4 | .87 | .55 | .65 | .31 | 1.7 | 1.4 | .14 | .01 | 1.7 |
| CFSM | .05 | .05 | .02 | .01 | .02 | .002 | .01 | .33 | .05 | .004 | .006 | .04 |
| IN. | .06 | .05 | .02 | .01 | .02 | .00 | .01 | .38 | .06 | .01 | .01 | .04 |
| AC-FT | 1950 | 1800 | 698 | 398 | 561 | 97 | 411 | 13050 | 1970 | 176 | 246 | 1440 |

CAL YR 1979 TOTAL 14333.54 MEAN 39.3 MAX 2350 MIN .95 AC-FT 28430
WTR YR 1980 TOTAL 11492.31 MEAN 31.4 MAX 2050 MIN .01 AC-FT 22790

## 07312500 WICHITA RIVER AT WICHITA FALLS, TX

**LOCATION.**--Lat 33°54'34", long 98°32'00", Wichita County, Hydrolgic Unit 11130206, near center of stream on downstream side of bridge on Beverly Drive in Wichita Falls, 4 mi (6 km) upstream from Fort Worth and Denver Railway Co. bridge, 8.4 mi (13.5 km) upstream from Holliday Creek and 55.3 mi (89.0 km) upstream from mouth.

**DRAINAGE AREA.**--3,140 $mi^2$ (8,130 $km^2$), of which 2,086 $mi^2$ (5,403 $km^2$) is above Lake Kemp Dam.

**PERIOD OF RECORD.**--February 1900 to January 1902 (monthly discharge only, published in WSP 1311), October 1910 to December 1911 (gage heights only), March 1938 to current year.
Water-quality records: Sediment records: January 1966 to September 1975.

**REVISED RECORDS.**--WSP 1211: Drainage area.

**GAGE.**--Water-stage recorder. Datum of gage is 924.26 ft (281.714 m) National Geodetic Vertical Datum of 1929. Febraury 1900 to February 1902 and Oct. 1, 1910, to Dec. 31, 1911, nonrecording gages at site 4 mi (6 km) downstream at different datum. Mar. 30, 1938, to Dec. 1, 1959, nonrecording gage at present site and datum.

**REMARKS.**--Records good. Flow from 2,086 $mi^2$ (5,403 $km^2$) is regulated by Lake Kemp, capacity 603,000 acre-ft (743 $hm^3$), 71 mi (114 km) upstream. Since completion of dam in 1923, no flow has been permitted to pass over spillway. Water is diverted from Lake Diversion, capacity 40,000 acre-ft (49.3 $hm^3$), 41 mi (82 km) upstream, for the irrigation of 42,000 acres (170 $km^2$) under permit in the vicinity of Wichita Falls. During the water year, Wichita County Water Improvement District No. 2 diverted 73,530 acre-ft (90.7 $hm^3$) from Lake Diversion for mining, industrial use, recreation, and irrigation of 26,635 acres (108 $km^2$). Several observations of water temperatures were made during the year.

**AVERAGE DISCHARGE.**--43 years (water years 1901, 1939-80), 270 $ft^3/s$ (7.646 $m^3/s$), 195,600 acre-ft/yr (241 $hm^3/yr$).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 17,800 $ft^3/s$ (504 $m^3/s$) Oct. 3, 1941, gage height, 24.0 ft (7.32 m); no flow Oct. 11, 1960 (construction of cofferdam upstream).

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum discharge, 50,000 $ft^3/s$ (1,420 $m^3/s$) June 8, 1915, computed by Vernon L. Sullivan, engineer for Big Wichita River Irrigation Co.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 4,320 $ft^3/s$ (122 $m^3/s$) Sept. 28 at 1500 hours, gage height, 15.51 ft (4.727 m); minimum, 18 $ft^3/s$ (0.51 $m^3/s$) Jan. 31, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 79 | 51 | 36 | 52 | 27 | 22 | 27 | 50 | 221 | 60 | 88 | 109 |
| 2 | 79 | 47 | 34 | 41 | 26 | 23 | 40 | 54 | 143 | 68 | 90 | 114 |
| 3 | 93 | 44 | 34 | 35 | 26 | 64 | 62 | 54 | 114 | 62 | 90 | 141 |
| 4 | 90 | 40 | 34 | 32 | 25 | 38 | 74 | 53 | 98 | 60 | 89 | 169 |
| 5 | 86 | 38 | 34 | 29 | 25 | 47 | 53 | 57 | 84 | 64 | 93 | 147 |
| 6 | 85 | 36 | 33 | 28 | 24 | 24 | 41 | 62 | 72 | 65 | 87 | 130 |
| 7 | 78 | 35 | 33 | 28 | 24 | 27 | 43 | 65 | 65 | 69 | 89 | 123 |
| 8 | 81 | 35 | 32 | 27 | 29 | 25 | 43 | 87 | 65 | 77 | 92 | 126 |
| 9 | 89 | 37 | 31 | 26 | 32 | 26 | 34 | 88 | 71 | 87 | 97 | 135 |
| 10 | 87 | 37 | 31 | 24 | 36 | 25 | 35 | 82 | 197 | 75 | 98 | 150 |
| 11 | 89 | 36 | 31 | 24 | 39 | 23 | 45 | 73 | 155 | 71 | 107 | 148 |
| 12 | 88 | 37 | 31 | 23 | 37 | 29 | 37 | 63 | 96 | 63 | 105 | 140 |
| 13 | 83 | 36 | 31 | 23 | 37 | 35 | 41 | 45 | 76 | 62 | 100 | 134 |
| 14 | 87 | 34 | 31 | 23 | 46 | 31 | 56 | 58 | 68 | 62 | 98 | 114 |
| 15 | 109 | 33 | 30 | 23 | 35 | 31 | 51 | 105 | 63 | 61 | 94 | 109 |
| 16 | 674 | 32 | 30 | 23 | 33 | 32 | 48 | 342 | 66 | 64 | 93 | 106 |
| 17 | 416 | 33 | 31 | 22 | 31 | 36 | 46 | 379 | 65 | 64 | 102 | 90 |
| 18 | 126 | 33 | 30 | 23 | 30 | 43 | 42 | 144 | 61 | 66 | 116 | 93 |
| 19 | 89 | 33 | 29 | 23 | 30 | 67 | 39 | 78 | 107 | 62 | 129 | 94 |
| 20 | 80 | 40 | 28 | 36 | 52 | 65 | 42 | 60 | 151 | 70 | 130 | 84 |
| 21 | 74 | 391 | 28 | 199 | 62 | 64 | 52 | 384 | 143 | 72 | 101 | 78 |
| 22 | 73 | 533 | 28 | 272 | 43 | 56 | 50 | 493 | 101 | 71 | 95 | 79 |
| 23 | 76 | 212 | 32 | 105 | 35 | 59 | 49 | 323 | 79 | 73 | 89 | 109 |
| 24 | 76 | 83 | 33 | 62 | 30 | 57 | 59 | 196 | 73 | 103 | 91 | 116 |
| 25 | 76 | 60 | 37 | 45 | 25 | 56 | 60 | 136 | 70 | 135 | 88 | 132 |
| 26 | 70 | 49 | 32 | 38 | 24 | 67 | 120 | 106 | 69 | 115 | 90 | 112 |
| 27 | 66 | 43 | 28 | 32 | 22 | 73 | 94 | 88 | 67 | 106 | 89 | 1740 |
| 28 | 63 | 40 | 45 | 31 | 23 | 80 | 73 | 188 | 65 | 106 | 93 | 4170 |
| 29 | 60 | 38 | 240 | 30 | 22 | 81 | 69 | 1380 | 59 | 94 | 102 | 3490 |
| 30 | 56 | 37 | 185 | 28 | --- | 64 | 54 | 2220 | 60 | 83 | 114 | 1420 |
| 31 | 55 | --- | 80 | 27 | --- | 36 | --- | 1060 | --- | 94 | 110 | --- |
| TOTAL | 3433 | 2233 | 1402 | 1434 | 930 | 1406 | 1579 | 8573 | 2824 | 2384 | 3049 | 13902 |
| MEAN | 111 | 74.4 | 45.2 | 46.3 | 32.1 | 45.4 | 52.6 | 277 | 94.1 | 76.9 | 98.4 | 463 |
| MAX | 674 | 533 | 240 | 272 | 62 | 81 | 120 | 2220 | 221 | 135 | 130 | 4170 |
| MIN | 55 | 32 | 28 | 22 | 22 | 22 | 27 | 45 | 59 | 60 | 87 | 78 |
| AC-FT | 6810 | 4430 | 2780 | 2840 | 1840 | 2790 | 3130 | 17000 | 5600 | 4730 | 6050 | 27570 |

CAL YR 1979 TOTAL 54039 MEAN 148 MAX 6070 MIN 15 AC-FT 107200
WTR YR 1980 TOTAL 43149 MEAN 118 MAX 4170 MIN 22 AC-FT 85590

## 07312700 WICHITA RIVER NEAR CHARLIE, TX

**LOCATION.**--Lat 34°03'11", long 98°17'47", Clay County, Hydrologic Unit 11130206, on right bank at upstream side of bridge on Farm Road 810, 3.0 mi (4.8 km) southeast of Charlie, and 5.7 mi (9.2 km) northwest of Petrolia.

**DRAINAGE AREA.**--3,439 mi² (8,907 km²), of which 2,086 mi² (5,403 km²) is above Lake Kemp Dam and 143 mi² (370 km²) is above Lake Wichita Dam.

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1967 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 872.71 ft (266.002 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Water-discharge records good. For statement regarding regulations and diversions, see station 07312500. Records furnished by the city of Wichita Falls show that 12,200 acre-ft (15.0 hm³) was returned to river above station as sewage effluent and filter plant washwater.

**AVERAGE DISCHARGE.**--13 years, 266 ft³/s (7.533 m³/s), 192,700 acre-ft/yr (238 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 6,090 ft³/s (172 m³/s) Nov. 4, 1972, gage height, 21.21 ft (6.465 m); minimum, 24 ft³/s (0.68 m³/s) Feb. 18, 1978, result of freezeup.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 4,700 ft³/s (133 m³/s) Sept. 29 at 1500 hours, gage height, 18.45 ft (5.624 m), from floodmark; minimum, 31 ft³/s (0.88 m³/s) Jan. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 120 | 104 | 65 | 137 | 45 | 37 | 80 | 92 | 952 | 92 | 116 | 154 |
| 2 | 110 | 94 | 63 | 88 | 45 | 35 | 90 | 89 | 327 | 92 | 104 | 148 |
| 3 | 107 | 89 | 60 | 66 | 42 | 34 | 285 | 102 | 235 | 107 | 103 | 202 |
| 4 | 135 | 82 | 58 | 57 | 39 | 72 | 170 | 98 | 195 | 99 | 106 | 244 |
| 5 | 136 | 71 | 57 | 50 | 40 | 67 | 124 | 92 | 170 | 88 | 105 | 256 |
| 6 | 142 | 69 | 54 | 47 | 39 | 66 | 101 | 92 | 147 | 89 | 124 | 222 |
| 7 | 138 | 67 | 52 | 44 | 39 | 84 | 79 | 118 | 127 | 107 | 130 | 195 |
| 8 | 131 | 64 | 52 | 41 | 43 | 67 | 64 | 119 | 113 | 109 | 127 | 178 |
| 9 | 118 | 68 | 50 | 41 | 96 | 67 | 60 | 142 | 113 | 121 | 130 | 233 |
| 10 | 114 | 73 | 48 | 40 | 73 | 64 | 57 | 134 | 121 | 123 | 139 | 222 |
| 11 | 125 | 62 | 49 | 39 | 67 | 70 | 61 | 127 | 281 | 115 | 133 | 260 |
| 12 | 130 | 62 | 50 | 37 | 83 | 86 | 64 | 115 | 228 | 104 | 136 | 212 |
| 13 | 129 | 74 | 62 | 36 | 70 | 95 | 59 | 113 | 149 | 88 | 136 | 192 |
| 14 | 113 | 69 | 58 | 35 | 64 | 109 | 54 | 87 | 124 | 88 | 136 | 178 |
| 15 | 122 | 64 | 50 | 36 | 70 | 113 | 69 | 301 | 111 | 85 | 130 | 150 |
| 16 | 238 | 62 | 50 | 36 | 65 | 111 | 78 | 670 | 98 | 88 | 130 | 144 |
| 17 | 778 | 58 | 46 | 36 | 55 | 114 | 70 | 634 | 97 | 88 | 130 | 136 |
| 18 | 433 | 56 | 46 | 36 | 52 | 110 | 81 | 524 | 101 | 87 | 144 | 127 |
| 19 | 214 | 55 | 50 | 35 | 48 | 100 | 70 | 248 | 95 | 95 | 163 | 124 |
| 20 | 166 | 64 | 46 | 42 | 45 | 106 | 72 | 134 | 182 | 89 | 182 | 119 |
| 21 | 152 | 335 | 43 | 310 | 53 | 107 | 68 | 131 | 237 | 95 | 188 | 103 |
| 22 | 151 | 706 | 43 | 502 | 90 | 107 | 79 | 653 | 229 | 105 | 150 | 93 |
| 23 | 144 | 563 | 48 | 357 | 68 | 102 | 73 | 670 | 180 | 110 | 133 | 238 |
| 24 | 138 | 283 | 105 | 189 | 52 | 95 | 68 | 505 | 150 | 114 | 127 | 185 |
| 25 | 137 | 160 | 65 | 116 | 43 | 103 | 76 | 337 | 135 | 150 | 122 | 175 |
| 26 | 134 | 117 | 52 | 83 | 39 | 104 | 84 | 225 | 115 | 165 | 116 | 208 |
| 27 | 121 | 96 | 50 | 66 | 38 | 111 | 149 | 171 | 113 | 138 | 108 | 463 |
| 28 | 107 | 80 | 61 | 57 | 38 | 139 | 140 | 141 | 116 | 138 | 116 | 2950 |
| 29 | 102 | 72 | 242 | 52 | 38 | 152 | 116 | 392 | 110 | 135 | 124 | 4480 |
| 30 | 107 | 67 | 366 | 49 | --- | 141 | 101 | 1580 | 96 | 126 | 133 | 4200 |
| 31 | 115 | --- | 249 | 46 | --- | 108 | --- | 2130 | --- | 112 | 160 | --- |
| TOTAL | 5107 | 3886 | 2390 | 2806 | 1579 | 2876 | 2742 | 10966 | 5447 | 3342 | 4081 | 16791 |
| MEAN | 165 | 130 | 77.1 | 90.5 | 54.4 | 92.8 | 91.4 | 354 | 182 | 108 | 132 | 560 |
| MAX | 778 | 706 | 366 | 502 | 96 | 152 | 285 | 2130 | 952 | 165 | 188 | 4480 |
| MIN | 102 | 55 | 43 | 35 | 38 | 34 | 54 | 87 | 95 | 85 | 103 | 93 |
| CFSM | .05 | .04 | .02 | .03 | .02 | .03 | .03 | .10 | .05 | .03 | .04 | .16 |
| IN. | .06 | .04 | .03 | .03 | .02 | .03 | .03 | .12 | .06 | .04 | .04 | .18 |
| AC-FT | 10130 | 7710 | 4740 | 5570 | 3130 | 5700 | 5440 | 21750 | 10800 | 6630 | 8090 | 33300 |

CAL YR 1979 TOTAL 81073 MEAN 222 MAX 5520 MIN 42 AC-FT 160800
WTR YR 1980 TOTAL 62013 MEAN 169 MAX 4480 MIN 34 AC-FT 123000

## 07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equation developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 10,000 micromhos Apr. 25, 1972; minimum daily, 384 micromhos Aug. 16, 1971.
WATER TEMPERATURES: Maximum daily, 33.5 °C July 6, 12, 14, 1978; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 8,430 microhos Apr. 28; minimum daily, 648 micromhos Sept. 29.
WATER TEMPERATURES: Maximum daily, 33.0°C June 29, 30; minimum daily, 0.0°C Feb. 9, 11.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 16... | 1425 | 263 | 6100 | 8.1 | 20.0 | 9.5 | 110 | 3.2 | 1200 | 1100 |
| DEC 04... | 1450 | 57 | 4200 | 7.9 | 7.0 | 9.8 | 84 | .9 | 930 | 720 |
| 31... | 1445 | 218 | 3290 | -- | 7.0 | -- | -- | -- | 570 | 440 |
| FEB 13... | 1535 | 72 | 3790 | -- | 6.5 | -- | -- | -- | 740 | 590 |
| 20... | 1300 | 43 | 5100 | 8.1 | 12.0 | 10.6 | 102 | 7.3 | 990 | 800 |
| MAR 25... | 1415 | 10 | 6180 | -- | 13.5 | -- | -- | -- | 1100 | 950 |
| APR 22... | 1130 | 76 | 6900 | 8.3 | 21.5 | 9.0 | 106 | 4.7 | 1300 | 1100 |
| MAY 30... | 1300 | 1590 | 882 | -- | 23.5 | -- | -- | -- | 220 | 69 |
| JUN 10... | 1230 | 114 | 3700 | 25.5 | 25.5 | 7.5 | 94 | 3.1 | 680 | 530 |
| AUG 19... | 1145 | 170 | 7010 | 8.1 | 28.0 | 6.8 | 91 | 2.9 | 1200 | 1100 |
| SEP 30... | 1510 | 4140 | 894 | -- | 18.0 | -- | -- | -- | 150 | 91 |

| DATE | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 16... | 290 | 110 | 910 | 12 | 12 | 140 | 0 | 760 | 1600 | .5 |
| DEC 04... | 220 | 92 | 560 | 8.0 | 9.5 | 250 | 0 | 410 | 1100 | .5 |
| 31... | 140 | 53 | 450 | 8.2 | 6.9 | 160 | 0 | 97 | 960 | .3 |
| FEB 13... | 170 | 76 | 480 | 7.7 | 9.2 | 180 | 0 | 340 | 950 | .6 |
| 20... | 230 | 100 | 740 | 10 | 9.7 | 230 | 0 | 330 | 1400 | .6 |
| MAR 25... | 280 | 93 | 900 | 12 | 12 | 160 | 0 | 660 | 1600 | .8 |
| APR 22... | 310 | 120 | 980 | 12 | 11 | 180 | 0 | 690 | 1800 | .7 |
| MAY 30... | 62 | 15 | 100 | 3.0 | 5.2 | 180 | 0 | 34 | 190 | .5 |
| JUN 10... | 170 | 62 | 490 | 8.2 | 9.8 | 180 | 0 | 330 | 900 | .5 |
| AUG 19... | 310 | 110 | 1100 | 14 | 13 | 130 | 0 | 850 | 1800 | .6 |
| SEP 30... | 43 | 11 | 110 | 3.9 | 4.5 | 75 | 0 | 73 | 190 | .2 |

## 07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) |
|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | |
| 16... | 5.5 | 3760 | 1.2 | .10 | 1.3 | .23 | 1.5 | 1.7 | .900 |
| DEC | | | | | | | | | |
| 04... | 9.9 | 2530 | .83 | .27 | 1.1 | 1.9 | .60 | 2.5 | .040 |
| 31... | 8.9 | 1800 | -- | -- | -- | -- | -- | -- | -- |
| FEB | | | | | | | | | |
| 13... | 4.2 | 2120 | -- | -- | -- | -- | -- | -- | -- |
| 20... | 3.8 | 2930 | .82 | .12 | .94 | 1.3 | 1.3 | 2.6 | 1.600 |
| MAR | | | | | | | | | |
| 25... | 1.7 | 3630 | -- | -- | -- | -- | -- | -- | -- |
| APR | | | | | | | | | |
| 22... | 1.0 | 4000 | .67 | .29 | .96 | .37 | 1.4 | 1.8 | 1.600 |
| MAY | | | | | | | | | |
| 30... | 9.6 | 505 | -- | -- | -- | -- | -- | -- | -- |
| JUN | | | | | | | | | |
| 10... | 9.6 | 2060 | .88 | .05 | .93 | .03 | 2.6 | 2.6 | 1.400 |
| AUG | | | | | | | | | |
| 19... | 3.9 | 4250 | .48 | .15 | .63 | .11 | 1.4 | 1.5 | .860 |
| SEP | | | | | | | | | |
| 30... | 5.6 | 475 | -- | -- | -- | -- | -- | -- | -- |

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 5107 | 5490 | 3290 | 45400 | 1400 | 19800 | 610 | 8360 | 1000 |
| NOV. | 1979 | 3886 | 3120 | 1810 | 19000 | 800 | 8420 | 280 | 2970 | 600 |
| DEC. | 1979 | 2390 | 3870 | 2240 | 14500 | 990 | 6420 | 350 | 2270 | 740 |
| JAN. | 1980 | 2806 | 2440 | 1380 | 10500 | 620 | 4710 | 190 | 1440 | 480 |
| FEB. | 1980 | 1579 | 4780 | 2830 | 12100 | 1200 | 5290 | 490 | 2090 | 900 |
| MAR. | 1980 | 2876 | 6150 | 3720 | 28900 | 1600 | 12500 | 710 | 5500 | 1100 |
| APR. | 1980 | 2742 | 5820 | 3520 | 26100 | 1500 | 11300 | 670 | 4980 | 1100 |
| MAY | 1980 | 10966 | 2250 | 1290 | 38100 | 580 | 17000 | 190 | 5590 | 440 |
| JUNE | 1980 | 5447 | 3910 | 2290 | 33700 | 1000 | 14900 | 380 | 5550 | 750 |
| JULY | 1980 | 3342 | 6950 | 4270 | 38600 | 1800 | 16600 | 860 | 7800 | 1300 |
| AUG. | 1980 | 4081 | 7170 | 4430 | 48800 | 1900 | 20900 | 910 | 10000 | 1300 |
| SEPT | 1980 | 16791 | 2410 | 1430 | 64600 | 620 | 28300 | 250 | 11200 | 460 |
| TOTAL | | 62013 | ** | ** | 380000 | ** | 166000 | ** | 67800 | ** |
| WTD. AVG. | | 169 | 3810 | 2270 | ** | 990 | ** | 400 | ** | 720 |

## 07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6050 | 5210 | 3250 | 2500 | 4070 | 4530 | 6250 | 5970 | 1630 | 6680 | 7170 | 7140 |
| 2 | 6220 | 5430 | 3590 | 3180 | 3700 | 4950 | 6060 | 5810 | 2090 | 6620 | 7400 | 7220 |
| 3 | 6080 | 5820 | 3930 | 3250 | 4210 | 5340 | 4250 | 5830 | 2550 | 6640 | 7530 | 6830 |
| 4 | 6140 | 5740 | 4130 | 2570 | 3740 | 5320 | 1840 | 5740 | 2670 | 6890 | 7490 | 5530 |
| 5 | 6520 | 5690 | 4440 | 2000 | 3670 | 5260 | 3580 | 5950 | 2970 | 6810 | 7360 | 6300 |
| 6 | 6600 | 5610 | 4500 | 3480 | 4380 | 6470 | 4570 | 6060 | 3090 | 7060 | 7280 | 6930 |
| 7 | 6480 | 5550 | 4680 | 3630 | 4800 | 6260 | 5060 | 6250 | 3160 | 7080 | 7560 | 6710 |
| 8 | 6750 | 5640 | 4750 | 3880 | 4580 | 6070 | 5820 | 6000 | 3300 | 7010 | 7290 | 6930 |
| 9 | 6320 | 5200 | 4820 | 4320 | 4400 | 5920 | 5620 | 6230 | 3630 | 6950 | 7220 | 6000 |
| 10 | 6790 | 5280 | 4570 | 3800 | 3500 | 5750 | 6250 | 5880 | 3610 | 6920 | 7150 | 5140 |
| 11 | 6610 | 5200 | 4550 | 4400 | 2890 | 6100 | 6850 | 6330 | 5100 | 6760 | 7410 | 5300 |
| 12 | 6580 | 4520 | 4630 | 3860 | 3350 | 6080 | 6140 | 6470 | 4400 | 7030 | 7420 | 5500 |
| 13 | 6590 | 5370 | 4620 | 4580 | 4060 | 6050 | 5910 | 6290 | 3210 | 7070 | 7110 | 6840 |
| 14 | 6530 | 5430 | 4930 | 4730 | 4180 | 6300 | 6420 | 6310 | 3440 | 7010 | 7070 | 6940 |
| 15 | 6700 | 4450 | 4090 | 4010 | 4900 | 6440 | 6060 | 3040 | 3660 | 7100 | 7020 | 6900 |
| 16 | 6230 | 5250 | 4270 | 4630 | 4960 | 6470 | 6320 | 1410 | 3990 | 7130 | 7050 | 6920 |
| 17 | 5310 | 5340 | 4390 | 3510 | 4580 | 6350 | 6760 | 2100 | 4320 | 6980 | 7020 | 6580 |
| 18 | 2520 | 5150 | 4650 | 4600 | 6220 | 6360 | 6430 | 2890 | 4700 | 6910 | 7120 | 7080 |
| 19 | 2860 | 4940 | 4730 | 3310 | 5770 | 6280 | 6310 | 2460 | 5140 | 7090 | 7090 | 6970 |
| 20 | 4050 | 5150 | 5170 | 4620 | 5170 | 6090 | 6340 | 2420 | 5330 | 7110 | 7030 | 7100 |
| 21 | 4490 | 3360 | 4970 | 3610 | 5160 | 6740 | 6850 | 2590 | 5680 | 7100 | 7230 | 7040 |
| 22 | 4830 | 1300 | 4940 | 943 | 5660 | 6400 | 6750 | 2900 | 5730 | 7040 | 7100 | 7180 |
| 23 | 5490 | 1530 | 4810 | 1750 | 7240 | 6380 | 6810 | 2420 | 6310 | 6990 | 6850 | 6870 |
| 24 | 5290 | 1790 | 4350 | 1630 | 7850 | 6360 | 6740 | 1400 | 5510 | 6980 | 6920 | 5230 |
| 25 | 5700 | 1620 | 4230 | 1220 | 8030 | 6180 | 6630 | 1380 | 5820 | 6900 | 7180 | 4830 |
| 26 | 6110 | 1710 | 2760 | 2170 | 4890 | 6300 | 6510 | 1550 | 6130 | 6860 | 7150 | 6240 |
| 27 | 6500 | 2160 | 4550 | 1940 | 5370 | 6400 | 7500 | 1710 | 5850 | 6900 | 7160 | 4100 |
| 28 | 6290 | 2270 | 5470 | 1180 | 4470 | 6280 | 8430 | 2030 | 6360 | 6920 | 7140 | 810 |
| 29 | 6100 | 2540 | 3500 | 2080 | 3470 | 6150 | 6760 | 1850 | 6580 | 7000 | 7090 | 648 |
| 30 | 5830 | 2930 | 1950 | 2030 | --- | 5840 | 5820 | 917 | 6670 | 7010 | 7020 | 797 |
| 31 | 6050 | --- | 3600 | 3430 | --- | 6100 | --- | 775 | --- | 7050 | 6960 | --- |
| MEAN | 5830 | 4240 | 4320 | 3120 | 4800 | 6050 | 6060 | 3840 | 4420 | 6950 | 7180 | 5820 |

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 23.5 | 13.5 | 4.5 | 5.0 | 3.0 | 4.0 | 18.0 | 21.0 | 25.0 | 29.0 | 28.0 | 27.0 |
| 2 | 23.0 | 11.5 | 5.5 | 8.0 | 3.0 | --- | 17.0 | 21.0 | 25.0 | 30.0 | 28.0 | 28.0 |
| 3 | 20.5 | 13.5 | 4.0 | 6.5 | 7.0 | 4.0 | 14.0 | 21.0 | 28.0 | 30.0 | 29.0 | 26.0 |
| 4 | 19.5 | 12.0 | 6.5 | 5.0 | 6.0 | 9.0 | 15.0 | 24.0 | 26.0 | 29.0 | 27.0 | 27.0 |
| 5 | 18.5 | 14.0 | 8.5 | 4.5 | 7.0 | 8.0 | 16.0 | 22.0 | 27.0 | 30.0 | 27.0 | 27.0 |
| 6 | 19.0 | 13.5 | 9.0 | 7.0 | 7.0 | 8.0 | 21.0 | 22.0 | 28.0 | 32.0 | 27.0 | 28.0 |
| 7 | 21.0 | 11.0 | 8.5 | 4.5 | 7.0 | --- | 21.0 | 26.0 | 31.0 | 32.0 | 28.0 | 29.0 |
| 8 | 21.0 | 11.5 | --- | 5.5 | 5.0 | 9.5 | 19.0 | 21.0 | 27.0 | 30.0 | 28.0 | 26.0 |
| 9 | 19.5 | 13.0 | 9.0 | 5.0 | .0 | 15.0 | 19.0 | 19.0 | 25.0 | 30.0 | 29.0 | 26.0 |
| 10 | 15.5 | 10.5 | 9.0 | 6.5 | --- | 15.5 | --- | 25.0 | 26.0 | 31.0 | 31.0 | 26.0 |
| 11 | 19.0 | 10.0 | 13.0 | 8.0 | .0 | 13.5 | 20.0 | 27.0 | 28.0 | 32.0 | 28.0 | 27.0 |
| 12 | 19.0 | 8.5 | 8.0 | 7.0 | 5.0 | 14.0 | 13.0 | 26.0 | 26.0 | 30.0 | 26.0 | 27.0 |
| 13 | 15.0 | 10.5 | 5.0 | 9.0 | 8.0 | 16.0 | 11.0 | 23.0 | 26.0 | 31.0 | 27.0 | 26.0 |
| 14 | 16.5 | 10.0 | 5.5 | 9.5 | 8.5 | 13.5 | 11.0 | 21.0 | 30.0 | 31.0 | 28.0 | 29.0 |
| 15 | 18.0 | 10.5 | 8.0 | 10.0 | 9.5 | 14.0 | 17.0 | 20.0 | 31.0 | 29.0 | 28.0 | 27.0 |
| 16 | 20.5 | 11.0 | 5.0 | 11.0 | 3.0 | 18.5 | 20.0 | 20.0 | 27.0 | 30.0 | 29.0 | 27.0 |
| 17 | 20.5 | 13.0 | 1.0 | 10.5 | 4.5 | 14.5 | 18.0 | 21.0 | --- | 31.0 | 29.0 | 27.0 |
| 18 | 20.5 | 13.5 | 2.0 | 9.0 | 4.0 | 14.5 | 17.0 | 21.0 | 31.0 | 30.0 | 28.0 | 28.0 |
| 19 | 21.5 | 16.0 | 5.0 | 11.5 | 12.0 | 16.0 | 17.0 | 21.0 | 31.0 | 31.0 | --- | 25.0 |
| 20 | 24.0 | 18.5 | 8.0 | 9.0 | 11.0 | 17.0 | 23.5 | 24.0 | 28.0 | 29.0 | 28.0 | 26.0 |
| 21 | 23.5 | 15.5 | 8.0 | 7.0 | 14.0 | 17.0 | 24.0 | 22.0 | 29.0 | --- | 28.0 | 26.0 |
| 22 | 18.0 | 13.0 | 12.0 | 7.0 | 13.5 | 14.5 | 21.0 | 23.0 | 30.0 | --- | 29.0 | 26.0 |
| 23 | 16.5 | 11.5 | 11.0 | 5.5 | 12.0 | --- | 21.0 | 23.0 | 32.0 | --- | 30.0 | 23.0 |
| 24 | 15.5 | 10.0 | 10.5 | 7.0 | 11.0 | --- | 22.5 | 23.0 | 29.0 | --- | 29.0 | 21.0 |
| 25 | --- | 11.0 | 8.5 | 6.5 | 8.5 | --- | 22.0 | 30.0 | 30.0 | --- | 27.0 | 23.0 |
| 26 | 18.0 | 8.5 | 10.0 | 4.0 | 11.0 | 15.0 | 16.0 | --- | 30.0 | --- | 27.0 | 22.0 |
| 27 | 17.0 | 9.5 | 11.0 | 4.0 | 9.5 | 15.0 | --- | 26.0 | 30.0 | --- | 27.0 | 16.0 |
| 28 | 19.5 | 9.0 | 11.0 | 2.0 | 13.0 | 18.0 | 19.0 | 28.0 | 30.0 | 29.0 | 28.0 | 15.0 |
| 29 | --- | 6.5 | 10.0 | 1.0 | 9.0 | 14.0 | 23.0 | 27.0 | 33.0 | 29.0 | --- | 15.0 |
| 30 | 18.5 | 4.5 | 8.0 | .5 | --- | 14.0 | 20.0 | 23.0 | 33.0 | 29.0 | 27.0 | 15.0 |
| 31 | 15.0 | --- | 8.5 | .5 | --- | 13.0 | --- | 24.0 | --- | 29.0 | 30.0 | --- |
| MEAN | 19.0 | 11.5 | 8.0 | 6.5 | 7.5 | 13.5 | 18.5 | 23.0 | 28.5 | 30.0 | 28.0 | 24.5 |

## 07314000 LAKE KICKAPOO NEAR ARCHER CITY, TX

LOCATION.--Lat 33°39'47", long 98°46'43", Archer County, Hydrologic Unit 11130209, on intake tower near left end of dam on North Fork Little Wichita River, 8.2 mi (13.2 km) south of Mankins, and 9.2 mi (14.8 km) northwest of Archer City.

DRAINAGE AREA.--275 $mi^2$ (712 $km^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1946 to current year. Prior to October 1965, monthend contents only.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Nonrecording gage read twice daily prior to Feb. 17, 1974, once daily thereafter. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by city of Wichita Falls). Prior to Oct. 8, 1946, water-stage recorder at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 8,200 ft (2,500 m) long, including a 483-foot-wide (147 m) reinforced concrete ogee-type uncontrolled spillway near right end of dam. The dam was completed Dec. 15, 1945, and storage began Feb. 1, 1946. The service outlet consists of two gate-controlled 4- by 5-foot (1.2 by 1.5 m) conduits. The dam and lake are owned by the city of Wichita Falls, which uses the water for their municipal supply. The capacity table is based on Geological Survey topographic maps, dated 1929. The capacity curve, dated November 1946, was entitled "Lake Kickapoo Area & Capacity Curve". Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 1,062.0 | - |
| Design flood (2-foot freeboard) | 1,060.0 | 221,000 |
| Crest of spillway | 1,045.0 | 106,000 |
| Lowest gated outlet (invert) | 1,000.92 | 0 |

COOPERATION.--Capacity curve, record of lake elevations, and diversions for municipal use are furnished by the city of Wichita Falls.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents, 134,300 acre-ft (166 $hm^3$) Aug. 2, 1950, elevation, 1,049.2 ft (319.80 m); minimum observed since first filling in July 1950, 35,660 acre-ft (44.0 $hm^3$) June 30, 1953, elevation, 1,029.8 ft (313.88 m).

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents, 71,300 acre-ft (87.9 $hm^3$) Oct. 1, elevation, 1,039.0 ft (316.69 m); minimum observed, 48,960 acre-ft (60.4 $hm^3$) Sept. 26, 27, elevation, 1,033.8 ft (315.10 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 1,033.0 | 46,000 | 1.037.0 | 62,000 |
| 1,034.0 | 49,700 | 1.038.0 | 66,500 |
| 1,035.0 | 53,600 | 1.039.0 | 71,300 |
| 1,036.0 | 57,700 | | |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 0800

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 71300 | 65600 | 62900 | 62000 | 62000 | 62000 | 60710 | 58130 | 61140 | 61140 | 53600 | 51260 |
| 2 | 67460 | 65600 | 62450 | 62000 | 62000 | 62000 | 60710 | 58130 | 61140 | 61140 | 53600 | 51260 |
| 3 | 67460 | 65600 | 62450 | 62000 | 62000 | 62000 | 58990 | 58130 | 61140 | 61140 | 52820 | 51260 |
| 4 | 67460 | 65600 | 62450 | 62000 | 62000 | 62000 | 58990 | 57700 | 61140 | 61140 | 52820 | 51260 |
| 5 | 67460 | 65600 | 62450 | 62000 | 62000 | 60710 | 58990 | 57700 | 61140 | 61140 | 52820 | 51260 |
| 6 | 67460 | 64700 | 62000 | 62000 | 62000 | 60710 | 58990 | 57290 | 61140 | 61140 | 52820 | 51260 |
| 7 | 67460 | 64700 | 62000 | 62000 | 62000 | 60710 | 58990 | 57290 | 61140 | 61140 | 52820 | 51260 |
| 8 | 67460 | 64700 | 62000 | 62000 | 62000 | 60710 | 58990 | 57290 | 61140 | 61140 | 52820 | 50870 |
| 9 | 67460 | 64700 | 62000 | 62000 | 62000 | 60710 | 58990 | 57290 | 61140 | 61140 | 52820 | 50870 |
| 10 | 67460 | 64700 | 62000 | 62000 | 62000 | 60710 | 58990 | 57290 | 61140 | 61140 | 52040 | 50870 |
| 11 | 66500 | 64700 | 62000 | 62000 | 62000 | 60710 | 58990 | 57290 | 61140 | 61140 | 52040 | 50870 |
| 12 | 66500 | 63800 | 62000 | 62000 | 62000 | 60710 | 58990 | 57290 | 61140 | 61140 | 52040 | 50480 |
| 13 | 66500 | 63800 | 62000 | 62000 | 62000 | 60710 | 58990 | 56470 | 61140 | 58560 | 52040 | 50480 |
| 14 | 66500 | 63800 | 62000 | 62000 | 62000 | 60710 | 58990 | 56470 | 61140 | 58560 | 52040 | 50480 |
| 15 | 66500 | 63800 | 62000 | 62000 | 62000 | 60710 | 58990 | 56470 | 61140 | 58130 | 52040 | 50480 |
| 16 | 66500 | 63800 | 62000 | 62000 | 62000 | 60710 | 58990 | 57290 | 61140 | 58130 | 52040 | 50090 |
| 17 | 66500 | 63800 | 62000 | 62000 | 62000 | 60710 | 58990 | 57700 | 61140 | 58130 | 52040 | 50090 |
| 18 | 66050 | 63800 | 62000 | 62000 | 62000 | 60710 | 58990 | 57700 | 61140 | 58130 | 52040 | 50090 |
| 19 | 66050 | 63350 | 62000 | 62000 | 62000 | 60710 | 58990 | 57700 | 61140 | 58130 | 52040 | 50090 |
| 20 | 66050 | 63350 | 62000 | 62000 | 62000 | 60710 | 58990 | 57700 | 61140 | 53600 | 52040 | 49700 |
| 21 | 66050 | 63350 | 62000 | 62000 | 62000 | 60710 | 58990 | 57700 | 61140 | 53600 | 52040 | 49700 |
| 22 | 66050 | 63350 | 62000 | 62000 | 62000 | 60710 | 58130 | 57700 | 61140 | 53600 | 52040 | 49700 |
| 23 | 66050 | 63350 | 62450 | 62000 | 62000 | 60710 | 58130 | 57700 | 61140 | 53600 | 52040 | 49330 |
| 24 | 66050 | 63350 | 62450 | 62000 | 62000 | 60710 | 58130 | 57700 | 61140 | 53600 | 52040 | 49330 |
| 25 | 66050 | 63350 | 62450 | 62000 | 62000 | 60710 | 58130 | 57700 | 61140 | 53600 | 51650 | 49330 |
| 26 | 66050 | 63350 | 62450 | 62000 | 62000 | 60710 | 58130 | 57700 | 61140 | 53600 | 51650 | 48960 |
| 27 | 65600 | 62900 | 62450 | 62000 | 62000 | 60710 | 58130 | 57700 | 61140 | 53600 | 51650 | 48960 |
| 28 | 65600 | 62900 | 62450 | 62000 | 62000 | 60710 | 58130 | 61140 | 61140 | 53600 | 51650 | 66500 |
| 29 | 65600 | 62900 | 62450 | 62000 | 62000 | 60710 | 58130 | 61140 | 61140 | 53600 | 51650 | 66500 |
| 30 | 65600 | 62900 | 62450 | 62000 | --- | 60710 | 58130 | 61140 | 61140 | 53600 | 51650 | 66500 |
| 31 | 65600 | --- | 62450 | 62000 | --- | 60710 | --- | 61140 | --- | 53600 | 51650 | --- |
| MAX | 71300 | 65600 | 62900 | 62000 | 62000 | 62000 | 60710 | 61140 | 61140 | 61140 | 53600 | 66500 |
| MIN | 65600 | 62900 | 62000 | 62000 | 62000 | 60710 | 58130 | 56470 | 61140 | 53600 | 51650 | 48960 |
| (†) | 1037.8 | 1037.2 | 1037.1 | 1037.0 | 1037.0 | 1036.7 | 1036.1 | 1036.8 | 1036.8 | 1035.0 | 1034.5 | 1038.0 |
| (‡) | -5700 | -2700 | -450 | -450 | 0 | -1290 | -2580 | +3010 | 0 | -7540 | -1950 | +14850 |
| (††) | 114 | 75.1 | 50.4 | 60.5 | 36.4 | 72.6 | 83.7 | 50.7 | 124 | 112 | 141 | 84.8 |

CAL YR 1979 MAX 74420 MIN 62000 ‡ 812 †† -7410
WTR YR 1980 MAX 71300 MIN 48960 ‡ 1005 †† -4800

† Gage height, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal use by city of Wichita Falls.

## 07314000 LAKE KICKAPOO NEAR ARCHER CITY, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| AUG | | | | | | | | | |
| 06... | 1320 | 572 | 28.0 | 130 | 0 | 32 | 13 | 65 | 2.4 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| AUG | | | | | | | | |
| 06... | 7.6 | 210 | 0 | 25 | 66 | .6 | 8.8 | 321 |

## 07314500 LITTLE WICHITA RIVER NEAR ARCHER CITY, TX

**LOCATION.**--Lat 33°39'45", long 98°36'46", Archer County, Hydrologic Unit 11130209, on left bank at downstream side of bridge on State Highway 79, 1.5 mi (2.4 km) downstream from confluence of North and Middle Forks, and 4.8 mi (7.7 km) north of Archer City.

**DRAINAGE AREA.**--481 mi$^2$ (1,246 km$^2$), of which 275 mi$^2$ (712 km$^2$) is above Lake Kickapoo.

**PERIOD OF RECORD.**--May 1932 to January 1956, August 1966 to current year.
Water-quality records: Chemical analyses: January 1953 to January 1956. Water temperatures: January 1953 to January 1956. Sediment records: May 1968 to September 1975.

**REVISED RECORDS.**--WSP 827: 1932-35. WSP 1211: Drainage area.

**GAGE.**--Water-stage recorder. Datum of gage is 934.72 ft (284.903 m) National Geodetic Vertical Datum of 1929. Aug. 17, 1954, to Jan. 6, 1956, nonrecording gage at present site and datum.

**REMARKS.**--Records fair. Some regulation by Lake Kickapoo (station 07314000) on North Fork Little Wichita River. Records furnished by the city of Wichita Falls show that 1,000 acre-ft (1.23 hm$^3$) was diverted from Lake Kickapoo for municipal use during the current water year. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--13 years (water years 1933-45) prior to completion of Lake Kickapoo, 110 ft$^3$/s (3.115 m$^3$/s), 79,700 acre-ft/yr (98.3 hm$^3$/yr); 24 years (water years 1946-55, 1967-80) regulated, 36.3 ft$^3$/s (1.028 m$^3$/s), 26,300 acre-ft/yr (32.4 hm$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 17,900 ft$^3$/s (507 m$^3$/s) Oct. 31, 1941, gage height, 26.18 ft (7.980 m); no flow at times.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood of June 1930 reached a stage of about 28 ft (8.5 m), from information by State Department of Highways and Public Transportation.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 3,100 ft$^3$/s (87.8 m$^3$/s) Sept. 29 at 1715 hours, gage height, 24.77 ft (7.550 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .15 | .02 | 4.2 | .06 | .05 | .11 | .00 | 6.8 | .00 | .00 | .00 |
| 2 | .00 | .15 | .02 | 2.0 | .10 | .03 | .05 | .00 | 2.9 | .00 | .00 | .00 |
| 3 | .00 | .15 | .02 | 1.0 | .13 | .03 | .03 | .00 | 1.6 | .00 | .00 | .68 |
| 4 | .00 | .15 | .02 | .83 | .15 | .03 | .03 | .00 | 1.0 | .00 | .00 | .82 |
| 5 | .00 | .15 | .03 | .51 | .15 | .03 | .02 | .00 | .52 | .00 | .00 | .94 |
| 6 | .00 | .15 | .03 | .21 | .15 | .03 | .02 | .00 | .22 | .00 | .00 | .18 |
| 7 | .00 | .15 | .03 | .06 | .15 | .02 | .01 | .00 | .16 | .00 | .00 | .04 |
| 8 | .00 | .15 | .03 | .03 | 5.9 | .01 | .01 | 1.5 | .13 | .00 | .00 | .02 |
| 9 | .00 | .15 | .03 | .03 | 71 | .01 | .00 | 14 | .84 | .00 | .00 | .02 |
| 10 | .00 | .15 | .10 | .03 | 19 | .01 | .00 | 10 | 1.5 | .00 | .00 | .02 |
| 11 | .00 | .15 | .15 | .02 | 7.6 | .01 | .00 | 3.7 | 1.1 | .00 | .00 | .02 |
| 12 | .00 | .15 | .21 | .03 | 16 | .05 | .00 | .99 | .55 | .00 | .00 | .02 |
| 13 | .00 | .15 | 1.2 | .03 | 25 | .16 | .00 | .32 | .11 | .00 | .00 | .02 |
| 14 | .00 | .15 | 2.0 | .03 | 11 | .13 | .00 | .24 | .06 | .00 | .00 | .02 |
| 15 | .00 | .15 | 2.0 | .03 | 5.6 | .07 | .00 | 19 | .02 | .00 | .00 | .01 |
| 16 | 95 | .15 | 1.2 | .03 | 4.8 | .05 | .00 | 342 | .01 | .00 | .00 | .00 |
| 17 | 27 | .21 | .66 | .03 | 3.2 | .05 | .00 | 80 | .00 | .00 | .00 | .00 |
| 18 | 4.5 | .21 | .51 | .04 | 2.6 | .03 | .00 | 6.5 | .00 | .00 | .00 | .00 |
| 19 | .83 | .21 | .51 | .03 | 4.7 | .02 | .00 | 2.9 | .01 | .00 | .00 | .00 |
| 20 | .29 | .21 | .39 | .05 | 8.4 | .01 | .00 | 3.0 | 13 | .00 | .00 | .00 |
| 21 | .10 | 6.3 | .29 | 2.4 | 5.1 | .01 | .00 | 168 | 11 | .00 | .00 | .00 |
| 22 | .10 | 4.5 | .29 | 7.4 | 2.5 | .01 | .00 | 65 | 5.9 | .00 | .00 | .00 |
| 23 | .10 | 1.0 | 1.0 | 3.9 | 1.3 | .01 | .00 | 8.8 | 2.1 | .00 | .00 | .03 |
| 24 | .10 | .66 | 2.3 | 2.3 | .82 | .01 | .00 | 4.3 | .41 | .00 | .00 | 5.6 |
| 25 | .10 | .51 | 5.6 | .73 | .40 | .00 | .00 | .97 | .06 | .00 | .00 | 1.5 |
| 26 | .10 | .39 | 8.4 | .35 | .20 | .00 | .00 | .19 | .02 | .00 | .00 | .07 |
| 27 | .10 | .21 | 3.5 | .18 | .14 | .00 | .00 | .04 | .00 | .00 | .00 | 157 |
| 28 | .10 | .15 | 8.4 | .15 | .09 | .00 | .00 | 179 | .00 | .00 | .00 | 1410 |
| 29 | .10 | .06 | 7.9 | .11 | .06 | .01 | .00 | 844 | .00 | .00 | 12 | 2830 |
| 30 | .10 | .03 | 6.2 | .15 | --- | .02 | .00 | 585 | .00 | .00 | .37 | 2340 |
| 31 | .15 | --- | 4.8 | .10 | --- | .23 | --- | 19 | --- | .00 | .21 | --- |
| TOTAL | 128.77 | 17.05 | 57.84 | 26.99 | 196.30 | 1.13 | .28 | 2358.45 | 50.02 | .00 | 12.58 | 6747.01 |
| MEAN | 4.15 | .57 | 1.87 | .87 | 6.77 | .036 | .009 | 76.1 | 1.67 | .000 | .41 | 225 |
| MAX | 95 | 6.3 | 8.4 | 7.4 | 71 | .23 | .11 | 844 | 13 | .00 | 12 | 2830 |
| MIN | .00 | .03 | .02 | .02 | .06 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| AC-FT | 255 | 34 | 115 | 54 | 389 | 2.2 | .6 | 4680 | 99 | .00 | 25 | 13380 |

CAL YR 1979 TOTAL 5604.79 MEAN 15.4 MAX 769 MIN .00 AC-FT 11120
WTR YR 1980 TOTAL 9596.42 MEAN 26.2 MAX 2830 MIN .00 AC-FT 19030

## 07314800 LAKE ARROWHEAD NEAR HENRIETTA, TX

**LOCATION.**--Lat 33°45'51", long 98°22'17", Clay County, Hydrologic Unit 11130209, at intake tower near center of dam on Little Wichita River, 2.3 mi (3.7 km) upstream from Lake Creek, 11 mi (18 km) southwest of Henrietta, and 12.3 mi (19.8 km) southeast of Wichita Falls.

**DRAINAGE AREA.**--822 mi² (2,129 km²).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--June 1967 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 0.40 ft (0.122 m) below National Geodetic Vertical Datum of 1929.

**REMARKS.**--The lake is formed by a rolled earthfill dam 15,900 ft (4,846 m) long, including an uncontrolled reinforced concrete ogee spillway 1,581 ft (482 m) wide located near the left end of dam. The dam was completed in December 1966 and storage began in June 1967. The service outlet works, located in a cylindrical service tower at upstream side of dam, consist of two gated 5-foot-diameter (2 m) inlets that can be used for controlled releases. The dam was built by the city of Wichita Falls to impound water for municipal, industrial, and recreational uses. The area-capacity curves are based on Geological Survey topographic maps. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Gage height (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 944.4 | - |
| Design flood | 939.95 | 551,400 |
| Crest of spillway (top of conservation pool) | 926.4 | 262,100 |
| Lowest gated outlet (invert) | 874.1 | - |

**COOPERATION.**--Capacity table furnished by Homer Hunter and Associates and Biggs and Mathews Consulting Engineers for the city of Wichita Falls. Area-capacity curves furnished by Homer Hunter and Associates. Record of diversions furnished by the city of Wichita Falls.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 246,300 acre-ft (304 hm³) July 28, 30, 1975, gage height, 925.40 ft (282.062 m); minimum since first appreciable storage, 4,640 acre-ft (5.72 hm³) Aug. 31 to Sept. 4, 1967.

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 126,400 acre-ft (156 hm³) Oct. 1 at 0015 hours, gage height, 917.93 ft (279.175m); minimum, 81,080 acre-ft (156 hm³) Sept. 26, 27, gage height, 910.56 ft (277.539 m).

Capacity table (gage height, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 910.0 | 77,130 | 914.0 | 108,500 |
| 911.0 | 84,270 | 915.0 | 117,500 |
| 912.0 | 91,840 | 916.0 | 127,100 |
| 913.0 | 99,900 | | |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 126100 | 120700 | 119500 | 117000 | 115700 | 116100 | 112100 | 107800 | 113100 | 105300 | 91840 | 84050 |
| 2 | 125800 | 120800 | 119400 | 116200 | 115600 | 115900 | 111900 | 107500 | 112900 | 104800 | 91450 | 85750 |
| 3 | 125600 | 120800 | 119400 | 116700 | 115500 | 115800 | 111900 | 107400 | 112700 | 104100 | 91300 | 86340 |
| 4 | 125300 | 120600 | 119400 | 116400 | 115500 | 115500 | 111800 | 107400 | 112300 | 103500 | 91450 | 85890 |
| 5 | 125100 | 120100 | 119400 | 116400 | 115600 | 115200 | 111800 | 107100 | 112100 | 103100 | 91690 | 85750 |
| 6 | 124900 | 120000 | 118400 | 116300 | 115300 | 115100 | 111600 | 107700 | 111800 | 102600 | 92230 | 85300 |
| 7 | 124700 | 120000 | 118400 | 116200 | 114800 | 114800 | 110700 | 107000 | 111600 | 102000 | 92080 | 85520 |
| 8 | 124400 | 120400 | 118400 | 116200 | 115600 | 114700 | 110900 | 107100 | 111000 | 101500 | 91840 | 85230 |
| 9 | 124000 | 120000 | 118400 | 116700 | 117500 | 114500 | 110900 | 107300 | 111100 | 101000 | 91530 | 85670 |
| 10 | 123800 | 119800 | 118400 | 116700 | 117500 | 114500 | 111000 | 107100 | 110800 | 100500 | 91370 | 85000 |
| 11 | 123600 | 119900 | 118400 | 116200 | 117500 | 114300 | 109500 | 107000 | 110700 | 100300 | 90980 | 85300 |
| 12 | 123300 | 119900 | 118400 | 116500 | 117000 | 114000 | 110000 | 106800 | 110300 | 99810 | 91060 | 84780 |
| 13 | 123000 | 120000 | 118400 | 116200 | 117400 | 113600 | 109700 | 105800 | 109900 | 99230 | 90900 | 84560 |
| 14 | 122800 | 119900 | 118400 | 116400 | 117600 | 113600 | 109800 | 105700 | 109700 | 98660 | 90590 | 84410 |
| 15 | 122900 | 119900 | 118400 | 116000 | 117500 | 113400 | 109800 | 108000 | 109200 | 98250 | 90360 | 84560 |
| 16 | 123000 | 119700 | 118400 | 116000 | 117500 | 113300 | 109300 | 108500 | 109100 | 97830 | 90520 | 83830 |
| 17 | 123200 | 119900 | 117500 | 116100 | 117500 | 113200 | 109000 | 109200 | 108700 | 97260 | 90360 | 83110 |
| 18 | 123200 | 119900 | 117500 | 116100 | 117400 | 113100 | 109100 | 108900 | 108600 | 96780 | 90360 | 82820 |
| 19 | 123300 | 119800 | 117500 | 115500 | 117000 | 113000 | 109200 | 109100 | 108700 | 96370 | 89530 | 82530 |
| 20 | 123100 | 119800 | 117500 | 116300 | 117100 | 112800 | 109200 | 108900 | 108400 | 96050 | 89530 | 82160 |
| 21 | 122600 | 119300 | 117500 | 116500 | 116900 | 112700 | 109000 | 109100 | 108400 | 95400 | 89070 | 81950 |
| 22 | 122200 | 119300 | 117500 | 116500 | 116700 | 112700 | 108700 | 109400 | 108000 | 95080 | 88690 | 81440 |
| 23 | 122200 | 119500 | 117500 | 116700 | 116500 | 112600 | 108700 | 109800 | 107900 | 94760 | 88380 | 81660 |
| 24 | 122100 | 119200 | 117500 | 116700 | 116200 | 112500 | 108400 | 109600 | 107500 | 94440 | 87020 | 81660 |
| 25 | 122000 | 118900 | 117500 | 116600 | 115900 | 112300 | 107900 | 109800 | 107100 | 94050 | 86640 | 81370 |
| 26 | 121800 | 119100 | 117500 | 116600 | 116200 | 112200 | 107900 | 111000 | 106800 | 93570 | 86340 | 81080 |
| 27 | 121100 | 119400 | 117500 | 116100 | 116300 | 112000 | 107800 | 110900 | 106400 | 93650 | 86190 | 84340 |
| 28 | 121200 | 119400 | 117500 | 115600 | 116200 | 111800 | 107900 | 110900 | 106100 | 93260 | 85970 | 91370 |
| 29 | 121100 | 119400 | 117000 | 116100 | 116100 | 112000 | 107700 | 110900 | 105700 | 92860 | 85970 | 99980 |
| 30 | 121100 | 119400 | 117000 | 115600 | --- | 112500 | 107300 | 112500 | 105400 | 92470 | 85820 | 108300 |
| 31 | 121000 | --- | 117000 | 115800 | --- | 112300 | --- | 113500 | --- | 92150 | 85000 | --- |
| MAX | 126100 | 120800 | 119500 | 117000 | 117600 | 116100 | 112100 | 113500 | 113100 | 105300 | 92230 | 108300 |
| MIN | 121000 | 118900 | 117000 | 115500 | 114800 | 111800 | 107300 | 105700 | 105400 | 92150 | 85000 | 81080 |
| (†) | 915.37 | 915.20 | 914.95 | 914.82 | 914.85 | 914.43 | 913.87 | 914.56 | 913.65 | 912.04 | 911.01 | 913.98 |
| (‡) | -5550 | -1600 | -2400 | -1200 | +300 | -3800 | -5000 | +6200 | -8100 | -13250 | -7150 | +23300 |
| (††) | 1773 | 1374 | 1382 | 1366 | 1356 | 1464 | 1644 | 1781 | 2720 | 3962 | 3473 | 2050 |

CAL YR 1979 MAX 142200 MIN 117000 ‡ -15300 †† 20504
WTR YR 1980 MAX 126100 MIN 81080 ‡ -18200 †† 24345

† Elevation, in acre-feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal use by the city of Wichita Falls.

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1970 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| SEP<br>10... | 1120 | 1600 | 28.0 | 230 | 90 | 51 | 26 | 190 | 5.5 |

| DATE | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| SEP<br>10... | 16 | 170 | 0 | 18 | 370 | .6 | .3 | 752 |

## 07314900 LITTLE WICHITA RIVER ABOVE HENRIETTA, TX

**LOCATION.**--Lat 33°49'36", long 98°14'23", Clay County, Hydrologic Unit 11130209, on right bank at downstream side of bridge on U.S. Highways 822 and 287, 1.0 mi (1.6 km) downstream from Duck Creek, 2.8 mi (4.5 km) west of Henrietta, 6.6 mi (10.6 km) upstream from Turkey Creek, and 7.6 mi (12.2 km) upstream from Dry Fork Little Wichita River.

**DRAINAGE AREA.**--1,037 mi² (2,686 km²).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--January 1953 to current year. Prior to October 1974, published as "near Henrietta".

**GAGE.**--Water-stage recorder and concrete control. Datum of gage is 831.57 ft (253.463 m) National Geodetic Vertical Datum of 1929. Prior to June 26, 1953, nonrecording gage. Prior to July 11, 1975, at site 2.6 mi (4.2 km) downstream at same datum.

**REMARKS.**--Water-discharge records fair. Flow largely regulated by Lake Arrowhead 39 mi (63 km) upstream, capacity 262,100 acre-ft (323 hm³). The city of Wichita Falls diverted 1,000 acre-ft (1.23 hm³) from Lake Kickapoo and 24,340 acre-ft (30.0 hm³) from Lake Arrowhead for municipal uses, and returned 12,200 acre-ft (15.0 hm³) as sewage effluent and filter plant washwater to the Wichita River below station 07312500 at Wichita Falls and above station 07312700 near Charlie. The city of Henrietta diverted 761 acre-ft (0.938 hm³) from pool at gage for municipal use. Diversion records were furnished by the cities of Wichita Falls and Henrietta, respectively.

**AVERAGE DISCHARGE.**--13 years (water years 1954-66) prior to completion of Lake Arrowhead, 124 ft³/s (3.512 m³/s), 89,840 acre-ft/yr (111 hm³/yr); 14 years (water years 1967-80) regulated, 19.6 ft³/s (0.555 m³/s), 14,200 acre-ft/yr (17.5 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 7,630 ft³/s (216 m³/s) May 1, 1966, gage height, 18.28 ft (5.572 m), at former site; maximum gage height, 18.36 ft (5.596 m) May 2, 1957, at former site, and 21.33 ft (6.501 m) Sept. 29, 1980, at present site; no flow at times each year.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood in 1908 reached a stage of 21 ft (6.4 m) at former site, from information by State Department of Highways and Public Transportation.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 1,580 ft³/s (44.7 m³/s) Sept. 29 at 0900 hours, gage height, 21.33 ft (6.501 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .00 | 2.4 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .33 | .00 |
| 2 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 13 | .00 |
| 3 | .00 | .00 | .00 | .00 | .00 | .00 | 18 | .00 | .00 | .00 | 13 | .00 |
| 4 | .00 | .00 | .00 | .00 | .00 | .00 | 18 | .00 | .00 | .00 | 13 | .00 |
| 5 | .00 | .00 | .00 | .00 | .00 | .00 | 4.1 | .00 | .00 | .00 | 14 | .02 |
| 6 | .00 | .00 | .00 | .00 | .00 | .00 | .75 | .00 | .00 | .00 | 6.2 | .00 |
| 7 | .00 | .00 | .00 | .00 | .00 | .00 | .13 | .00 | .00 | .00 | .03 | .00 |
| 8 | .00 | .00 | .00 | .00 | 2.2 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 9 | .00 | .00 | .00 | .00 | 7.8 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 10 | .00 | .00 | .00 | .00 | 6.8 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 11 | .00 | .00 | .00 | .00 | 5.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 12 | .00 | .00 | .00 | .00 | 8.1 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 13 | .00 | .00 | .00 | .00 | 11 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 14 | .00 | .00 | .00 | .00 | 5.6 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 15 | .00 | .00 | .00 | .00 | .52 | .00 | .00 | 52 | .00 | .00 | .00 | .00 |
| 16 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 161 | .00 | 7.8 | .00 | .00 |
| 17 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 46 | .00 | 15 | .00 | .00 |
| 18 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 15 | .00 | 15 | .00 | .00 |
| 19 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 7.8 | .00 | 6.1 | .00 | .00 |
| 20 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 4.0 | .00 | .00 | .00 | .00 |
| 21 | .00 | .00 | .00 | .74 | .00 | .00 | .00 | 2.2 | .00 | .00 | .00 | 12 |
| 22 | 6.5 | .00 | .00 | 1.0 | .00 | .00 | .00 | 1.5 | .00 | .00 | .00 | 17 |
| 23 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .03 | .00 | .00 | .00 | 19 |
| 24 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 19 |
| 25 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 13 |
| 26 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .59 |
| 27 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 250 |
| 28 | .00 | 35 | .61 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 1110 |
| 29 | .00 | 49 | 4.1 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 1560 |
| 30 | .00 | 26 | .28 | .00 | --- | .00 | .00 | .00 | .00 | .00 | .00 | 1310 |
| 31 | .00 | --- | .00 | .00 | --- | .00 | --- | .00 | --- | .00 | .00 | --- |
| TOTAL | 6.50 | 110.00 | 7.39 | 1.74 | 47.02 | .00 | 40.98 | 289.53 | .00 | 43.90 | 59.56 | 4310.61 |
| MEAN | .21 | 3.67 | .24 | .056 | 1.62 | .000 | 1.37 | 9.34 | .000 | 1.42 | 1.92 | 144 |
| MAX | 6.5 | 49 | 4.1 | 1.0 | 11 | .00 | 18 | 161 | .00 | 15 | 14 | 1560 |
| MIN | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| AC-FT | 13 | 218 | 15 | 3.5 | 93 | .00 | 81 | 574 | .00 | 87 | 118 | 8550 |

CAL YR 1979 TOTAL 1256.37 MEAN 3.44 MAX 94 MIN .00 AC-FT 2490
WTR YR 1980 TOTAL 4917.23 MEAN 13.4 MAX 1560 MIN .00 AC-FT 9750

## 07314900 LITTLE WICHITA RIVER ABOVE HENRIETTA, TX--Continued

### WATER-QUALITY RECORDS

**PERIOD OF RECORD.**--Chemical analyses: December 1952 to January 1956, March 1959 to September 1966, January 1968 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|
| FEB<br>13... | 0840 | 12 | 971 | 3.5 | 170 | 68 | 42 | 17 | 120 |
| SEP<br>29... | 1505 | 1570 | 71 | 15.0 | 21 | 0 | 5.3 | 1.9 | 4.5 |

| DATE | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| FEB<br>13... | 4.0 | 9.6 | 130 | 0 | 15 | 230 | .3 | 2.0 | 500 |
| SEP<br>29... | .4 | 4.4 | 27 | 0 | 3.3 | 6.1 | .1 | 9.9 | 49 |

## 07315200 EAST FORK LITTLE WICHITA RIVER NEAR HENRIETTA, TX

LOCATION.--Lat 33°48'46", long 98°05'05", Clay County, Hydrologic Unit 11130209, on downstream side of bridge on U.S. Highway 82, 5.8 mi (9.3 km) upstream from Little Wichita River, 6.4 mi (10.3 km) east of Henrietta, and 8.9 mi (14.3 km) west of Ringgold.

DRAINAGE AREA.--178 mi$^2$ (461 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1963 to current year.

REVISED RECORDS.--WRD TX-72-1: 1966(M).

GAGE.--Water-stage recorder. Datum of gage is 825.32 ft (251.558 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. No known diversions above station.

AVERAGE DISCHARGE.--16 years (water years 1965-80), 20.1 ft$^3$/s (0.569 m$^3$/s), 1.53 in/yr (39 mm/yr), 14,560 acre-ft/yr (18.0 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,500 ft$^3$/s (439 m$^3$/s) May 12, 1972, gage height, 28.85 ft (8.793 m), from rating curve extended above 4,000 ft$^3$/s (113 m$^3$/s) on basis of contracted-opening measurement of 15,500 ft$^3$/s (439 m$^3$/s); no flow for many days most years.
Maximum stage since at least 1920, that of May 12, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1941 reached a stage of 28.8 ft (8.78 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,410 ft$^3$/s (39.9 m$^3$/s) Sept. 29 at 2100 hours, gage height, 20.76 ft (6.328 m), no other peak above base of 300 ft$^3$/s (8.50 m$^3$/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .00 | .00 | .00 | .00 | .00 | .02 | .00 | .00 | .00 | .00 | .00 |
| 2 | .00 | .00 | .00 | .00 | .00 | .00 | .01 | .00 | .00 | .00 | .00 | .00 |
| 3 | .00 | .00 | .00 | .00 | .00 | .00 | .01 | .00 | .00 | .00 | .00 | .00 |
| 4 | .00 | .00 | .00 | .00 | .00 | .00 | .01 | .00 | .00 | .00 | .00 | .00 |
| 5 | .00 | .00 | .00 | .00 | .00 | .00 | .01 | .00 | .00 | .00 | .00 | .00 |
| 6 | .00 | .00 | .00 | .00 | .00 | .00 | .01 | .00 | .00 | .00 | .00 | .00 |
| 7 | .00 | .00 | .00 | .00 | .00 | .01 | .00 | .00 | .00 | .00 | .00 | .00 |
| 8 | .00 | .00 | .00 | .00 | .07 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 9 | .00 | .00 | .00 | .00 | .14 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 10 | .00 | .00 | .00 | .00 | .13 | .00 | .01 | .00 | .00 | .00 | .00 | .00 |
| 11 | .00 | .00 | .00 | .00 | .07 | .00 | .01 | .00 | .00 | .00 | .00 | .00 |
| 12 | .00 | .00 | .00 | .00 | .02 | .01 | .01 | .00 | .00 | .00 | .00 | .00 |
| 13 | .00 | .00 | .00 | .00 | .02 | .01 | .01 | .00 | .00 | .00 | .00 | .00 |
| 14 | .00 | .00 | .00 | .00 | .03 | .01 | .01 | .00 | .00 | .00 | .00 | .00 |
| 15 | .00 | .00 | .00 | .00 | .13 | .01 | .01 | 30 | .00 | .00 | .00 | .00 |
| 16 | .00 | .00 | .00 | .00 | .12 | .01 | .01 | 182 | .00 | .00 | .00 | .00 |
| 17 | .00 | .00 | .00 | .00 | .08 | .01 | .01 | 58 | .00 | .00 | .00 | .00 |
| 18 | .00 | .00 | .00 | .00 | .05 | .00 | .01 | 6.3 | .00 | .00 | .00 | .00 |
| 19 | .00 | .00 | .00 | .00 | .04 | .00 | .01 | 2.0 | .00 | .00 | .00 | .00 |
| 20 | .00 | .00 | .00 | .00 | .03 | .00 | .01 | .89 | .00 | .00 | .00 | .00 |
| 21 | .00 | .00 | .00 | .02 | .02 | .00 | .01 | .73 | .00 | .00 | .00 | .00 |
| 22 | .00 | .00 | .00 | .00 | .01 | .00 | .01 | .63 | .00 | .00 | .00 | .00 |
| 23 | .00 | .00 | .00 | .00 | .00 | .01 | .01 | .71 | .00 | .00 | .00 | .00 |
| 24 | .00 | .00 | .00 | .00 | .00 | .01 | .01 | .42 | .00 | .00 | .00 | .00 |
| 25 | .00 | .00 | .00 | .00 | .00 | .01 | .01 | .20 | .00 | .00 | .00 | .00 |
| 26 | .00 | .00 | .00 | .00 | .00 | .01 | .00 | .06 | .00 | .00 | .00 | .00 |
| 27 | .00 | .00 | .00 | .00 | .00 | .02 | .00 | .03 | .00 | .00 | .00 | 9.4 |
| 28 | .00 | .00 | .01 | .00 | .00 | .01 | .00 | .01 | .00 | .00 | .00 | 687 |
| 29 | .00 | .00 | .00 | .00 | .00 | .01 | .00 | .00 | .00 | .00 | .00 | 1330 |
| 30 | .00 | .00 | .00 | .00 | --- | .01 | .00 | .00 | .00 | .00 | .00 | 1040 |
| 31 | .00 | --- | .00 | .00 | --- | .01 | --- | .00 | --- | .00 | .00 | --- |
| TOTAL | .00 | .00 | .01 | .02 | .96 | .17 | .23 | 281.98 | .00 | .00 | .00 | 3066.40 |
| MEAN | .000 | .000 | .000 | .001 | .033 | .005 | .008 | 9.10 | .000 | .000 | .000 | 102 |
| MAX | .00 | .00 | .01 | .02 | .14 | .02 | .02 | 182 | .00 | .00 | .00 | 1330 |
| MIN | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| CFSM | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .05 | .000 | .000 | .000 | .57 |
| IN. | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .06 | .00 | .00 | .00 | .64 |
| AC-FT | .00 | .00 | .02 | .04 | 1.9 | .3 | .5 | 559 | .00 | .00 | .00 | 6080 |

CAL YR 1979 TOTAL 2706.02 MEAN 7.41 MAX 615 MIN .00 AC-FT 5370
WTR YR 1980 TOTAL 3349.77 MEAN 9.15 MAX 1330 MIN .00 AC-FT 6640

## 07315200 EAST FORK LITTLE WICHITA RIVER NEAR HENRIETTA, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1965 to September 1968, October 1969 to current year.
Sediment records: October 1965 to September 1975.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICRO-MHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|
| FEB 13... | 1415 | .02 | 351 | 9.0 | 79 | 0 | 20 | 7.1 | 37 |
| MAR 26... | 0915 | .01 | 1480 | 9.5 | 330 | 0 | 82 | 31 | 210 |
| SEP 28... | 1300 | 1370 | 75 | 15.0 | 21 | 3 | 5.5 | 1.8 | 5.1 |

| DATE | SODIUM AD-SORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| FEB 13... | 1.8 | 4.5 | 120 | 0 | 28 | 39 | .2 | 8.9 | 204 |
| MAR 26... | 5.0 | 3.2 | 530 | 0 | 52 | 160 | .6 | 19 | 819 |
| SEP 28... | .5 | 4.3 | 22 | 0 | 4.0 | 11 | .1 | 5.9 | 49 |

## 07315500 RED RIVER NEAR TERRAL, OK

LOCATION.--Lat 33°52'43", long 97°56'03", Jefferson County, Hydrologic Unit 11130201, near left bank on downstream side of pier of bridge on U.S. Highway 81, 0.5 mi (0.8 km) downstream from Chicago, Rock Island, and Pacific Railroad Co. bridge, 1.2 mi (1.9 km) south of Terral, 3.6 mi (5.8 km) downstream from Little Wichita River, and at mile 872 (1,403 km).

DRAINAGE AREA.--28,723 mi$^2$ (74,393 km$^2$), of which 5,936 mi$^2$ (15,374 km$^2$) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 770.31 ft (234.790 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 12, 1939, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good. Many small diversions for irrigation, oilfield, and municipal uses upstream from station.

AVERAGE DISCHARGE.--42 years (water years 1939-80), 2,144 ft$^3$/s (60.72 m$^3$/s), 1,553,000 acre-ft/yr (1.91 km$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 197,000 ft$^3$/s (5,580 m$^3$/s) June 8, 1941, gage height, 28.12 ft (8.571 m); minimum, 43 ft$^3$/s (1.22 m$^3$/s) Mar. 15, 1939.
Maximum stage since at least 1891, that of June 8, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 19, 1935, reached a stage of 27.2 ft (8.29 m); floods in 1891 and May 1, 1908, are reported to have reached about the same stage.

EXTREMES FOR CURRENT YEAR.--Peak discharges above above of 21,000 ft$^3$/s (595 m$^3$/s) and maximum (*):

| Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| May 19 | 1400 | 35,500 | 1,010 | 18.34 | 5.590 |
| June 2 | 2300 | *40,100 | 1,140 | 19.06 | 5.809 |

Minimum discharge, 143 ft$^3$/s (4.05 m$^3$/s) Sept. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 245 | 184 | 375 | 899 | 461 | 303 | 328 | 779 | 31500 | 482 | 255 | 196 |
| 2 | 233 | 177 | 379 | 666 | 447 | 283 | 323 | 675 | 38000 | 447 | 237 | 206 |
| 3 | 221 | 223 | 371 | 540 | 414 | 289 | 336 | 577 | 20600 | 426 | 226 | 223 |
| 4 | 205 | 379 | 349 | 455 | 404 | 294 | 415 | 544 | 7030 | 410 | 211 | 261 |
| 5 | 205 | 373 | 333 | 429 | 397 | 275 | 630 | 575 | 5320 | 402 | 204 | 308 |
| 6 | 212 | 340 | 314 | 415 | 397 | 290 | 478 | 572 | 4580 | 385 | 197 | 312 |
| 7 | 214 | 294 | 308 | 383 | 389 | 293 | 386 | 539 | 4100 | 373 | 196 | 301 |
| 8 | 216 | 278 | 302 | 364 | 440 | 291 | 321 | 588 | 3920 | 377 | 207 | 278 |
| 9 | 216 | 269 | 294 | 359 | 434 | 291 | 280 | 501 | 4800 | 382 | 216 | 273 |
| 10 | 199 | 249 | 298 | 353 | 440 | 276 | 264 | 483 | 4630 | 387 | 207 | 277 |
| 11 | 195 | 236 | 294 | 349 | 494 | 275 | 247 | 474 | 4800 | 387 | 211 | 298 |
| 12 | 193 | 236 | 301 | 340 | 494 | 276 | 235 | 429 | 3610 | 378 | 224 | 286 |
| 13 | 191 | 226 | 303 | 338 | 472 | 281 | 228 | 387 | 2960 | 367 | 225 | 283 |
| 14 | 187 | 218 | 304 | 338 | 465 | 281 | 223 | 362 | 2230 | 346 | 227 | 249 |
| 15 | 192 | 212 | 324 | 331 | 467 | 289 | 220 | 1340 | 2640 | 333 | 228 | 229 |
| 16 | 194 | 204 | 327 | 325 | 466 | 309 | 218 | 6660 | 3670 | 312 | 224 | 206 |
| 17 | 204 | 197 | 333 | 319 | 470 | 322 | 216 | 20000 | 1860 | 304 | 214 | 196 |
| 18 | 380 | 197 | 317 | 319 | 465 | 294 | 212 | 27500 | 1480 | 296 | 213 | 179 |
| 19 | 535 | 194 | 340 | 320 | 444 | 293 | 207 | 32000 | 1230 | 285 | 219 | 176 |
| 20 | 377 | 190 | 348 | 324 | 417 | 279 | 208 | 8230 | 1090 | 281 | 209 | 160 |
| 21 | 311 | 637 | 333 | 385 | 392 | 270 | 199 | 5010 | 1040 | 281 | 219 | 153 |
| 22 | 296 | 3220 | 335 | 847 | 378 | 269 | 193 | 5010 | 1110 | 277 | 251 | 149 |
| 23 | 249 | 1750 | 348 | 1810 | 380 | 264 | 186 | 5630 | 1030 | 267 | 253 | 177 |
| 24 | 229 | 1820 | 363 | 1630 | 384 | 269 | 193 | 4750 | 868 | 276 | 222 | 160 |
| 25 | 216 | 1100 | 368 | 1130 | 371 | 260 | 188 | 4900 | 772 | 273 | 211 | 172 |
| 26 | 208 | 738 | 396 | 824 | 355 | 262 | 181 | 3640 | 711 | 279 | 208 | 219 |
| 27 | 201 | 570 | 378 | 705 | 348 | 275 | 196 | 3000 | 653 | 309 | 226 | 381 |
| 28 | 196 | 484 | 404 | 623 | 339 | 302 | 829 | 2460 | 596 | 303 | 215 | 3530 |
| 29 | 188 | 416 | 442 | 570 | 324 | 325 | 1350 | 9920 | 558 | 290 | 206 | 6390 |
| 30 | 182 | 393 | 546 | 533 | --- | 363 | 950 | 20700 | 519 | 292 | 203 | 7940 |
| 31 | 175 | --- | 837 | 489 | --- | 345 | --- | 25400 | --- | 279 | 195 | --- |
| TOTAL | 7265 | 16004 | 11264 | 17712 | 12148 | 8988 | 10440 | 193635 | 157907 | 10486 | 6759 | 24168 |
| MEAN | 234 | 533 | 363 | 571 | 419 | 290 | 348 | 6246 | 5264 | 338 | 218 | 806 |
| MAX | 535 | 3220 | 837 | 1810 | 494 | 363 | 1350 | 32000 | 38000 | 482 | 255 | 7940 |
| MIN | 175 | 177 | 294 | 319 | 324 | 260 | 181 | 362 | 519 | 267 | 195 | 149 |
| CFSM | .01 | .02 | .02 | .03 | .02 | .01 | .02 | .27 | .23 | .02 | .01 | .04 |
| IN. | .01 | .03 | .02 | .03 | .02 | .01 | .02 | .32 | .26 | .02 | .01 | .04 |
| AC-FT | 14410 | 31740 | 22340 | 35130 | 24100 | 17830 | 20710 | 384100 | 313200 | 20800 | 13410 | 47940 |

CAL YR 1979 TOTAL 581575 MEAN 1593 MAX 29800 MIN 121 CFSM .07 IN .95 AC-FT 1154000
WTR YR 1980 TOTAL 476776 MEAN 1303 MAX 38000 MIN 149 CFSM .06 IN .78 AC-FT 945700

### 07315500 RED RIVER NEAR TERRAL, OK--Continued

### WATER-QUALITY RECORDS

**PERIOD OF RECORD.**--Chemical analyses: October 1967 to current year.

**PERIOD OF DAILY RECORD.**--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

**REMARKS.**--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

**EXTREMES FOR PERIOD OF DAILY RECORD.**--
SPECIFIC CONDUCTANCE: Maximum daily, 10,700 micromhos Apr. 23, 1970; minimum daily, 450 micromhos May 25, 1975.
WATER TEMPERATURES: Maximum daily, 32.0°C July 19, 1974, July 10, 1976; minimum daily, 0.0°C on many days during winter months.

**EXTREMES FOR CURRENT YEAR.**--
SPECIFIC CONDUCTANCE: Maximum daily, 9,430 micromhos Feb. 29; minimum daily, 665 micromhos Sept. 30.
WATER TEMPERATURES: Maximum daily, 29.0°C June 22, 25, 27, Aug. 25; minimum daily, .0°C Dec. 17, Jan. 31, Feb. 1.

#### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEC C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 11... | 0835 | 195 | 6610 | 7.5 | 14.0 | 1200 | 1100 | 310 | 100 | 1100 |
| DEC 31... | 1020 | 790 | 5610 | -- | 5.0 | 990 | 840 | 250 | 89 | 830 |
| JAN 31... | 1130 | 489 | 7490 | -- | .0 | 1100 | 970 | 300 | 90 | 1200 |
| MAR 26... | 1005 | 259 | 7500 | -- | 12.0 | 1300 | 1200 | 350 | 110 | 1200 |
| APR 30... | 0900 | 950 | 6760 | -- | 19.0 | 1200 | 1100 | 340 | 86 | 1100 |
| MAY 31... | 1015 | 25400 | 1000 | -- | 24.0 | 220 | 120 | 67 | 13 | 120 |
| JUN 02... | 1155 | 38000 | 1150 | -- | 24.5 | 270 | 170 | 83 | 16 | 130 |
| JUL 31... | 1015 | 279 | 6220 | -- | 26.0 | 1200 | 1100 | 310 | 110 | 920 |
| AUG 31... | 0930 | 195 | 6020 | -- | 25.0 | 1200 | 1100 | 300 | 110 | 880 |
| SEP 30... | 1030 | 7940 | 669 | -- | 17.0 | 130 | 61 | 36 | 9.0 | 81 |

| DATE | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 11... | 14 | 12 | 160 | 0 | 840 | 1800 | .4 | 8.1 | 4250 |
| DEC 31... | 11 | 10 | 190 | 0 | 620 | 1500 | .4 | 5.5 | 3400 |
| JAN 31... | 16 | 10 | 180 | 0 | 800 | 2000 | .4 | 7.8 | 4500 |
| MAR 26... | 14 | 11 | 190 | 0 | 970 | 1900 | .7 | 2.0 | 4640 |
| APR 30... | 14 | 12 | 150 | 0 | 850 | 1800 | .4 | 8.0 | 4270 |
| MAY 31... | 3.5 | 6.5 | 120 | 0 | 130 | 180 | .5 | 8.9 | 585 |
| JUN 02... | 3.4 | 7.2 | 130 | 0 | 200 | 260 | .4 | 7.3 | 768 |
| JUL 31... | 11 | 10 | 140 | 0 | 890 | 1600 | .6 | 6.4 | 3920 |
| AUG 31... | 11 | 13 | 130 | 0 | 880 | 1600 | .6 | 7.7 | 3860 |
| SEP 30... | 3.1 | 4.4 | 80 | 0 | 63 | 130 | .2 | 5.6 | 369 |

## 07315500 RED RIVER NEAR TERRAL, OK--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 7265 | 6200 | 3830 | 75200 | 1600 | 30800 | 800 | 15600 | 1100 |
| NOV. | 1979 | 16004 | 3590 | 2190 | 94800 | 870 | 37400 | 470 | 20400 | 670 |
| DEC. | 1979 | 11264 | 6100 | 3770 | 115000 | 1500 | 46600 | 780 | 23900 | 1100 |
| JAN. | 1980 | 17712 | 5070 | 3110 | 149000 | 1300 | 59900 | 660 | 31400 | 910 |
| FEB. | 1980 | 12148 | 7830 | 4910 | 161000 | 2100 | 68100 | 980 | 32100 | 1300 |
| MAR. | 1980 | 8988 | 7660 | 4790 | 116000 | 2000 | 49000 | 960 | 23400 | 1300 |
| APR. | 1980 | 10440 | 6610 | 4100 | 116000 | 1700 | 47600 | 840 | 23800 | 1200 |
| MAY | 1980 | 193635 | 2210 | 1320 | 691000 | 490 | 258600 | 300 | 156300 | 440 |
| JUNE | 1980 | 157907 | 2230 | 1340 | 573000 | 520 | 219800 | 300 | 126800 | 430 |
| JULY | 1980 | 10486 | 6740 | 4180 | 118000 | 1700 | 48800 | 860 | 24400 | 1200 |
| AUG. | 1980 | 6759 | 6630 | 4110 | 75000 | 1700 | 30900 | 850 | 15500 | 1200 |
| SEPT | 1980 | 24168 | 2080 | 1260 | 82400 | 490 | 32200 | 270 | 17900 | 390 |
| TOTAL | | 476776 | ** | ** | 2367000 | ** | 930000 | ** | 511000 | ** |
| WTD. AVG. | | 1303 | 3020 | 1840 | ** | 720 | ** | 400 | ** | 560 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6780 | 6650 | 3540 | 4020 | 7740 | 9000 | 7060 | 5700 | 1020 | 6940 | 6250 | 6120 |
| 2 | 6930 | 6800 | 4180 | 4050 | 7800 | 8780 | 6650 | 5000 | 1150 | 6950 | 6290 | 6340 |
| 3 | 6970 | 6490 | 4750 | 4450 | 7430 | 8650 | 6440 | 5790 | 1210 | 7160 | 6390 | 6110 |
| 4 | 7000 | 5000 | 5380 | 5080 | 6000 | 8600 | 6200 | 6620 | 1420 | 7350 | 6540 | 6310 |
| 5 | 7130 | 4200 | 5420 | 5900 | 6930 | 8180 | 5250 | 6990 | 1760 | 7460 | 6600 | 6330 |
| 6 | 7200 | 4110 | 5830 | 6110 | 7870 | 7880 | 4940 | 6220 | 2370 | 7360 | 6870 | 6120 |
| 7 | 7240 | 5290 | 5230 | 6190 | 7080 | 7450 | 5190 | 7150 | 2750 | 7320 | 7110 | 5820 |
| 8 | 7160 | 6660 | 5710 | 6690 | 6850 | 7520 | 5960 | 6000 | 3280 | 7250 | 7230 | 5800 |
| 9 | 7270 | 9220 | 5980 | 6900 | 7070 | 7620 | 6740 | 5750 | 2630 | 7180 | 7340 | 5680 |
| 10 | 6790 | 7840 | 6140 | 6840 | 7160 | 7720 | 7200 | 5530 | 2360 | 7070 | 7300 | 5500 |
| 11 | 6630 | 7140 | 6550 | 6830 | 7220 | 7600 | 6740 | 6010 | 2680 | 6790 | 7170 | 5350 |
| 12 | 6760 | 6960 | 6700 | 7290 | 7110 | 7520 | 6930 | 6800 | 2480 | 6570 | 6900 | 5750 |
| 13 | 7180 | 7360 | 6880 | 7630 | 6400 | 7480 | 7670 | 8030 | 3230 | 6480 | 6740 | 5680 |
| 14 | 7250 | 7510 | 6480 | 7200 | 6660 | 7390 | 7680 | 7740 | 3660 | 6450 | 6690 | 6060 |
| 15 | 7330 | 7220 | 6340 | 7270 | 6900 | 7310 | 8110 | 5300 | 5000 | 6430 | 6730 | 5730 |
| 16 | 7130 | 6930 | 6230 | 7020 | 7600 | 7420 | 8260 | 2100 | 7210 | 6410 | 6630 | 6160 |
| 17 | 6940 | 6970 | 6380 | 7550 | 7640 | 7880 | 7550 | 1340 | 8590 | 6380 | 6570 | 6300 |
| 18 | 6750 | 7140 | 6490 | 6940 | 8540 | 7390 | 6980 | 1650 | 7980 | 6390 | 6560 | 6270 |
| 19 | 6320 | 7290 | 6530 | 6910 | 8690 | 7480 | 7070 | 1940 | 7380 | 6450 | 6470 | 6530 |
| 20 | 3540 | 6950 | 6760 | 6870 | 9210 | 7430 | 7110 | 2090 | 6710 | 6410 | 6390 | 6670 |
| 21 | 4050 | 5000 | 6320 | 6890 | 8760 | 7500 | 7480 | 2390 | 6390 | 6390 | 6850 | 6710 |
| 22 | 4560 | 1500 | 6530 | 5540 | 9270 | 7780 | 7720 | 3010 | 5880 | 6310 | 6890 | 6670 |
| 23 | 4400 | 1770 | 6520 | 2350 | 8950 | 7400 | 7590 | 3180 | 5340 | 6440 | 6810 | 5780 |
| 24 | 5290 | 2300 | 7380 | 2670 | 8540 | 7500 | 7970 | 3350 | 5600 | 6480 | 6700 | 5870 |
| 25 | 5140 | 2610 | 7070 | 3420 | 8800 | 8050 | 7740 | 3540 | 6210 | 6380 | 6600 | 5980 |
| 26 | 5290 | 2950 | 7200 | 3750 | 8900 | 7450 | 7930 | 3860 | 6630 | 6510 | 6450 | 6700 |
| 27 | 5900 | 2790 | 7000 | 4000 | 9140 | 7300 | 7790 | 4300 | 7070 | 6630 | 6390 | 1870 |
| 28 | 6220 | 3080 | 6890 | 5250 | 9330 | 7360 | 7250 | 4570 | 7150 | 6510 | 6270 | 970 |
| 29 | 6250 | 2890 | 6520 | 6600 | 9430 | 7140 | 5370 | 3500 | 6890 | 6340 | 5910 | 775 |
| 30 | 6300 | 3090 | 6180 | 7300 | --- | 6900 | 6770 | 1510 | 6930 | 6340 | 5940 | 665 |
| 31 | 6470 | --- | 5210 | 7500 | --- | 7120 | --- | 993 | --- | 6220 | 6040 | --- |
| MEAN | 6330 | 5390 | 6140 | 5900 | 7900 | 7670 | 6980 | 4450 | 4630 | 6690 | 6630 | 5420 |

## 07315500 RED RIVER NEAR TERRAL, OK--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22.0 | 11.0 | 4.0 | 5.0 | .0 | --- | 17.0 | 19.0 | 24.0 | 28.0 | 26.0 | 24.0 |
| 2 | 19.0 | 11.0 | 7.0 | 8.0 | 4.0 | 3.0 | 18.0 | 20.0 | 24.0 | 27.0 | 27.0 | 26.0 |
| 3 | 19.0 | 11.0 | --- | 6.0 | 6.0 | 3.0 | 15.0 | 19.0 | 24.0 | 25.0 | 27.0 | 27.0 |
| 4 | 16.0 | 11.0 | 7.0 | 4.0 | 6.0 | 9.0 | 15.0 | 20.0 | 26.0 | 16.0 | 27.0 | 27.0 |
| 5 | 17.0 | 12.0 | 7.0 | 4.0 | 8.0 | 6.0 | 14.0 | 22.0 | 25.0 | 26.0 | 25.0 | 27.0 |
| 6 | 17.0 | 12.0 | --- | 4.0 | 8.0 | 12.0 | 14.0 | 22.0 | 26.0 | 26.0 | 27.0 | 27.0 |
| 7 | 18.0 | 10.0 | 7.0 | 3.0 | --- | 14.0 | 19.0 | 22.0 | 26.0 | 27.0 | 27.0 | 27.0 |
| 8 | 19.0 | 11.0 | 7.0 | 3.0 | --- | 12.0 | 14.0 | 19.0 | 25.0 | 26.0 | 27.0 | 26.0 |
| 9 | 16.0 | 12.0 | 8.0 | 4.0 | --- | 12.0 | 15.0 | 17.0 | 23.0 | 27.0 | 27.0 | 27.0 |
| 10 | 13.0 | 8.0 | 10.0 | 8.0 | --- | 14.0 | 14.0 | 23.0 | 26.0 | 27.0 | --- | 25.0 |
| 11 | 15.0 | 7.0 | 15.0 | 8.0 | --- | --- | 20.0 | 23.0 | 24.0 | 28.0 | 26.0 | 26.0 |
| 12 | 18.0 | 8.0 | --- | 7.0 | --- | 14.0 | 11.0 | 24.0 | 25.0 | 28.0 | --- | 26.0 |
| 13 | 15.0 | 7.0 | 4.0 | 7.0 | 5.0 | 14.0 | 8.0 | 21.0 | 27.0 | 27.0 | --- | 25.0 |
| 14 | --- | 8.0 | 5.0 | 9.0 | 9.0 | --- | 14.0 | 22.0 | 24.0 | 27.0 | --- | 25.0 |
| 15 | 16.0 | --- | 7.0 | 10.0 | 10.0 | 12.0 | 13.0 | 19.0 | --- | 28.0 | --- | 20.0 |
| 16 | 18.0 | 11.0 | 4.0 | 11.0 | 2.0 | 15.0 | 19.0 | 17.0 | 26.0 | 26.0 | --- | 25.0 |
| 17 | 21.0 | 12.0 | .0 | 11.0 | 4.0 | 14.0 | 16.0 | 19.0 | 27.0 | 26.0 | --- | 20.0 |
| 18 | 21.0 | --- | 1.0 | 11.0 | 4.0 | 11.0 | 19.0 | 21.0 | 27.0 | 27.0 | --- | 25.0 |
| 19 | 21.0 | 16.0 | 5.0 | 12.0 | 8.0 | 15.0 | 19.0 | 20.0 | 27.0 | 27.0 | --- | 26.0 |
| 20 | 21.0 | 19.0 | 7.0 | 7.0 | 12.0 | 14.0 | 18.0 | 22.0 | 26.0 | 27.0 | --- | 26.0 |
| 21 | 21.0 | 14.0 | 9.0 | 7.0 | 14.0 | 16.0 | 21.0 | 20.0 | 27.0 | 27.0 | 27.0 | --- |
| 22 | 16.0 | 12.0 | 10.0 | 7.0 | 16.0 | 12.0 | 18.0 | 21.0 | 29.0 | 27.0 | 26.0 | 25.0 |
| 23 | 13.0 | 9.0 | 10.0 | --- | 10.0 | 14.0 | 20.0 | 22.0 | 28.0 | 26.0 | 28.0 | 21.0 |
| 24 | 15.0 | 8.0 | 10.0 | 6.0 | 10.0 | 11.0 | 20.0 | 23.0 | 28.0 | 25.0 | 28.0 | 22.0 |
| 25 | 17.0 | 9.0 | 8.0 | 8.0 | 8.0 | 10.0 | 20.0 | 25.0 | 29.0 | 26.0 | 29.0 | 24.0 |
| 26 | 15.0 | 9.0 | 8.0 | 6.0 | 7.0 | 6.0 | 13.0 | 26.0 | 28.0 | 27.0 | 28.0 | 21.0 |
| 27 | 16.0 | 9.0 | 11.0 | 2.0 | 10.0 | 14.0 | 12.0 | 26.0 | 29.0 | 26.0 | 28.0 | 18.0 |
| 28 | 16.0 | 7.0 | 11.0 | --- | 12.0 | 13.0 | 16.0 | 24.0 | 28.0 | 26.0 | 25.0 | 15.0 |
| 29 | 17.0 | 6.0 | 9.0 | --- | 11.0 | 13.0 | 17.0 | 25.0 | 27.0 | 27.0 | 28.0 | 16.0 |
| 30 | 18.0 | 4.0 | 7.0 | 7.0 | --- | 10.0 | 19.0 | 24.0 | 27.0 | 26.0 | 26.0 | 17.0 |
| 31 | 11.0 | --- | 7.0 | .0 | --- | 12.0 | --- | 24.0 | --- | 26.0 | 25.0 | --- |
| MEAN | 17.0 | 10.0 | 7.5 | 6.5 | 8.0 | 12.0 | 16.5 | 21.5 | 26.5 | 26.5 | 27.0 | 23.5 |

## 07315950 MOSS LAKE NEAR GAINESVILLE, TX

**LOCATION.**--Lat 33°46'26", long 97°12'50", Cooke County, Hydrologic Unit 11130201, on top of upstream side of dam adjacent to guardrail of roadway about 250 ft (76 m) from right end of Fish Creek dam on Fish Creek, 1.6 mi (2.6 km) upstream from Bearhead Creek, 3.7 mi (6.0 km) upstream from mouth, and 10 mi (16 km) northwest of Gainesville.

**DRAINAGE AREA.**--65 $mi^2$ (168 $km^2$).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1967 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Apr. 20, 1979, recording gage at site about 150 ft (46 m) upstream at same datum.

**REMARKS.**--The lake is formed by a rolled earthfill dam 1,460 ft (445 m) long. The dam was completed and storage began Dec. 2, 1966. An uncontrolled morning-glory-type spillway with a 7- by 7-foot (2 by 2 m) opening is designed to discharge 2,500 $ft^3/s$ (70.8 $m^3/s$) at a 10-foot (3 m) head. The emergency spillway is a 400-foot-wide (120 m) cut through natural ground located about 100 ft (30 m) to the left of the left end of dam. The dam was built by the city of Gainesville to impound water for municipal use. Area and capacity tables are based on a 1961 survey. There was no diversion from the lake during the current water year. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 740.0 | - |
| Top of design flood pool | 736.0 | 55,230 |
| Crest of spillway | 725.0 | 36,440 |
| Crest of spillway (top of conservation pool) | 715.0 | 23,210 |
| Lowest gated outlet (invert) | 666.0 | 78 |

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 32,960 acre-ft (40.6 $hm^3$) Oct. 31, 1974, elevation, 722.63 ft (220.258 m); minimum since lake first filled in May 1968, 17,740 acre-ft (21.9 $hm^3$) Sept. 26, 1980, elevation, 709.67 ft (216.307 m).

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 21,280 acre-ft (26.2 $hm^3$) Oct. 1 at 0100 hours, elevation, 713.22 ft (217.389 m); minimum, 17,740 acre-ft (21.9 $hm^3$) Sept. 26, elevation, 709.67 ft (216.307 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 709.0 | 17,110 | 712.0 | 20,010 |
| 711.0 | 19,010 | 714.0 | 22,110 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 21250 | 20800 | 20550 | 20560 | 20480 | 20500 | 20370 | 20190 | 20240 | 19810 | 18930 | 18150 |
| 2 | 21220 | 20780 | 20540 | 20540 | 20470 | 20500 | 20370 | 20160 | 20220 | 19780 | 18900 | 18130 |
| 3 | 21190 | 20770 | 20530 | 20530 | 20480 | 20490 | 20350 | 20160 | 20210 | 19740 | 18850 | 18110 |
| 4 | 21150 | 20750 | 20530 | 20530 | 20470 | 20470 | 20350 | 20160 | 20170 | 19710 | 18800 | 18110 |
| 5 | 21140 | 20710 | 20510 | 20510 | 20470 | 20490 | 20350 | 20160 | 20150 | 19690 | 18780 | 18080 |
| 6 | 21110 | 20710 | 20500 | 20500 | 20460 | 20490 | 20340 | 20150 | 20130 | 19660 | 18760 | 18050 |
| 7 | 21070 | 20700 | 20500 | 20500 | 20440 | 20490 | 20300 | 20130 | 20120 | 19620 | 18730 | 18040 |
| 8 | 21060 | 20760 | 20490 | 20500 | 20550 | 20470 | 20290 | 20140 | 20120 | 19600 | 18710 | 18030 |
| 9 | 21010 | 20740 | 20490 | 20500 | 20590 | 20480 | 20300 | 20130 | 20120 | 19580 | 18690 | 18020 |
| 10 | 21000 | 20720 | 20470 | 20500 | 20590 | 20480 | 20260 | 20090 | 20110 | 19530 | 18660 | 18000 |
| 11 | 20990 | 20710 | 20460 | 20500 | 20590 | 20480 | 20240 | 20100 | 20070 | 19510 | 18650 | 17980 |
| 12 | 20970 | 20710 | 20500 | 20490 | 20600 | 20460 | 20280 | 20120 | 20060 | 19470 | 18650 | 17960 |
| 13 | 20930 | 20710 | 20510 | 20490 | 20610 | 20480 | 20260 | 20080 | 20020 | 19430 | 18620 | 17940 |
| 14 | 20900 | 20700 | 20500 | 20490 | 20600 | 20470 | 20260 | 20080 | 20000 | 19390 | 18590 | 17920 |
| 15 | 20920 | 20700 | 20500 | 20490 | 20580 | 20460 | 20250 | 20310 | 19960 | 19370 | 18540 | 17900 |
| 16 | 20920 | 20690 | 20460 | 20500 | 20570 | 20460 | 20250 | 20320 | 19940 | 19330 | 18500 | 17880 |
| 17 | 20920 | 20660 | 20470 | 20490 | 20590 | 20450 | 20230 | 20300 | 19930 | 19310 | 18510 | 17860 |
| 18 | 20900 | 20680 | 20460 | 20490 | 20580 | 20450 | 20230 | 20320 | 19900 | 19290 | 18470 | 17840 |
| 19 | 20890 | 20680 | 20460 | 20480 | 20600 | 20450 | 20220 | 20300 | 19920 | 19250 | 18460 | 17810 |
| 20 | 20890 | 20690 | 20460 | 20490 | 20610 | 20410 | 20210 | 20300 | 20050 | 19210 | 18430 | 17800 |
| 21 | 20910 | 20700 | 20460 | 20540 | 20610 | 20430 | 20210 | 20360 | 20050 | 19200 | 18420 | 17770 |
| 22 | 20900 | 20690 | 20480 | 20530 | 20610 | 20420 | 20200 | 20360 | 20040 | 19170 | 18400 | 17750 |
| 23 | 20890 | 20670 | 20530 | 20540 | 20600 | 20390 | 20200 | 20350 | 20020 | 19160 | 18390 | 17780 |
| 24 | 20860 | 20660 | 20530 | 20510 | 20590 | 20380 | 20210 | 20350 | 20010 | 19120 | 18360 | 17780 |
| 25 | 20840 | 20650 | 20500 | 20510 | 20580 | 20380 | 20190 | 20350 | 19990 | 19100 | 18320 | 17760 |
| 26 | 20820 | 20630 | 20530 | 20490 | 20570 | 20380 | 20170 | 20340 | 19960 | 19080 | 18310 | 17740 |
| 27 | 20820 | 20600 | 20510 | 20480 | 20580 | 20380 | 20170 | 20310 | 19930 | 19090 | 18280 | 18090 |
| 28 | 20790 | 20590 | 20560 | 20480 | 20580 | 20410 | 20160 | 20320 | 19900 | 19040 | 18260 | 18950 |
| 29 | 20780 | 20570 | 20560 | 20480 | 20500 | 20390 | 20160 | 20280 | 19890 | 19030 | 18220 | 19050 |
| 30 | 20840 | 20560 | 20570 | 20470 | --- | 20370 | 20150 | 20280 | 19840 | 19000 | 18200 | 19060 |
| 31 | 20820 | --- | 20570 | 20480 | --- | 20360 | --- | 20240 | --- | 18960 | 18160 | --- |
| MAX | 21250 | 20800 | 20570 | 20560 | 20610 | 20500 | 20370 | 20360 | 20240 | 19810 | 18930 | 19060 |
| MIN | 20780 | 20560 | 20460 | 20470 | 20440 | 20360 | 20150 | 20080 | 19840 | 18960 | 18160 | 17740 |
| (†) | 712.79 | 712.53 | 712.54 | 712.46 | 712.48 | 712.34 | 712.14 | 712.22 | 711.83 | 710.95 | 710.12 | 711.05 |
| (‡) | -460 | -260 | +10 | -90 | +20 | -140 | -210 | +90 | -400 | -880 | -800 | +900 |

CAL YR 1979 MAX 26860 MIN 19630 ‡ +890
WTR YR 1980 MAX 21250 MIN 17740 ‡ -2220

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

## 07315950 MOSS LAKE NEAR GAINESVILLE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| MAR | | | | | | | | | |
| 31... | 1220 | 325 | 13.5 | 140 | 12 | 51 | 3.8 | 9.9 | .4 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| MAR | | | | | | | | |
| 31... | 3.3 | 160 | 0 | 18 | 11 | .2 | 4.8 | 181 |

## 07316000 RED RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°43'40", long 97°09'35", in SW1/4 sec.36, T.9 S., R.1 E., Love County, Okla., Hydrologic Unit 11130201, near center of span on downstream side of bridge on U.S. Highway 77, 0.2 mi (0.3 km) downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 5.0 mi (8.0 km) downstream from Fish Creek, 7.0 mi (11.0 km) north of Gainesville, and at mile 791.5 (1,273.5 km).

DRAINAGE AREA.--30,782 mi² (79,725 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1936 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 627.91 ft (191.387 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 17, 1939, and Feb. 13, 1965, to Nov. 14, 1966, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records fair. Flow slightly regulated by Lake Kemp (station 07331500), since 1943 by Lake Altus in Oklahoma, since 1946 by Lake Kickapoo (station 07314000), and since 1967 by Lake Arrowhead and Moss Lake (stations 07314800 and 07315950).

COOPERATION.--Gage-height record and 19 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--44 years, 2,677 ft³/s (75.81 m³/s), 1,939,000 acre-ft/yr (2.39 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 168,000 ft³/s (4,760 m³/s) June 9, 1941, gage height, 24.15 ft (7.361 m); maximum gage height, 26.53 ft (8.086 m) May 21, 1951; minimum discharge, 48 ft³/s (1.36 m³/s) Jan. 27, 1940.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 24,000 ft³/s (680 m³/s) and maximum (*):

| Date | Time | Discharge | | Gage height | |
|---|---|---|---|---|---|
| | | (ft³/s) | (m³/s) | (ft) | (m) |
| May 20 | 0715 | 34,400 | 974 | 17.37 | 5.294 |
| June 3 | 1730 | *41,500 | 1,180 | 18.20 | 5.547 |

Minimum daily discharge, 182 ft³/s (5.15 m³/s) Sept. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 294 | 220 | 519 | 362 | 524 | 330 | 316 | 979 | 31800 | 597 | 260 | 199 |
| 2 | 285 | 210 | 469 | 548 | 485 | 323 | 352 | 1050 | 35800 | 559 | 252 | 196 |
| 3 | 281 | 205 | 429 | 727 | 454 | 311 | 418 | 778 | 39900 | 519 | 246 | 193 |
| 4 | 263 | 200 | 398 | 636 | 433 | 320 | 544 | 668 | 19000 | 490 | 232 | 185 |
| 5 | 260 | 200 | 388 | 521 | 414 | 298 | 460 | 588 | 8830 | 466 | 223 | 185 |
| 6 | 249 | 262 | 367 | 435 | 395 | 291 | 367 | 533 | 6860 | 445 | 220 | 190 |
| 7 | 238 | 386 | 347 | 390 | 376 | 289 | 473 | 522 | 5680 | 430 | 214 | 208 |
| 8 | 229 | 405 | 329 | 367 | 407 | 289 | 512 | 532 | 4810 | 414 | 202 | 260 |
| 9 | 229 | 420 | 313 | 346 | 481 | 291 | 422 | 527 | 4760 | 390 | 193 | 274 |
| 10 | 217 | 389 | 297 | 330 | 508 | 289 | 364 | 529 | 5410 | 384 | 185 | 281 |
| 11 | 217 | 343 | 296 | 318 | 477 | 295 | 340 | 500 | 5430 | 371 | 188 | 278 |
| 12 | 223 | 328 | 293 | 300 | 451 | 300 | 325 | 458 | 5280 | 369 | 193 | 274 |
| 13 | 217 | 314 | 304 | 292 | 442 | 300 | 319 | 484 | 3910 | 365 | 196 | 263 |
| 14 | 205 | 300 | 304 | 289 | 469 | 292 | 308 | 436 | 3040 | 356 | 196 | 263 |
| 15 | 204 | 292 | 302 | 280 | 476 | 288 | 293 | 558 | 2490 | 351 | 196 | 263 |
| 16 | 212 | 275 | 295 | 289 | 452 | 287 | 279 | 6170 | 1890 | 341 | 193 | 259 |
| 17 | 218 | 260 | 281 | 288 | 441 | 299 | 263 | 14800 | 2140 | 330 | 193 | 248 |
| 18 | 220 | 249 | 282 | 279 | 444 | 292 | 253 | 26800 | 1990 | 320 | 196 | 233 |
| 19 | 213 | 245 | 289 | 270 | 460 | 296 | 242 | 31800 | 1600 | 309 | 196 | 221 |
| 20 | 210 | 245 | 292 | 272 | 456 | 318 | 235 | 26900 | 1640 | 298 | 196 | 208 |
| 21 | 422 | 254 | 290 | 308 | 440 | 301 | 229 | 9360 | 1540 | 290 | 200 | 193 |
| 22 | 527 | 246 | 294 | 334 | 423 | 292 | 222 | 7210 | 1230 | 292 | 200 | 187 |
| 23 | 438 | 971 | 316 | 339 | 398 | 284 | 217 | 6000 | 1090 | 285 | 205 | 182 |
| 24 | 362 | 2300 | 323 | 474 | 385 | 274 | 208 | 5500 | 1070 | 285 | 205 | 190 |
| 25 | 335 | 1950 | 312 | 1390 | 361 | 274 | 215 | 5010 | 1040 | 278 | 210 | 190 |
| 26 | 299 | 1840 | 309 | 1480 | 362 | 274 | 219 | 4500 | 921 | 266 | 210 | 200 |
| 27 | 271 | 1250 | 308 | 1140 | 367 | 284 | 221 | 3950 | 829 | 274 | 211 | 300 |
| 28 | 247 | 898 | 324 | 882 | 358 | 300 | 210 | 3240 | 756 | 263 | 208 | 500 |
| 29 | 226 | 701 | 365 | 737 | 348 | 300 | 195 | 2820 | 690 | 260 | 208 | 1700 |
| 30 | 246 | 593 | 369 | 653 | --- | 298 | 258 | 11600 | 634 | 263 | 208 | 9500 |
| 31 | 244 | --- | 360 | 578 | --- | 304 | --- | 28600 | --- | 266 | 208 | --- |
| TOTAL | 8301 | 16751 | 10364 | 15854 | 12487 | 9183 | 9279 | 203402 | 202060 | 11126 | 6443 | 17823 |
| MEAN | 268 | 558 | 334 | 511 | 431 | 296 | 309 | 6561 | 6735 | 359 | 208 | 594 |
| MAX | 527 | 2300 | 519 | 1480 | 524 | 330 | 544 | 31800 | 39900 | 597 | 260 | 9500 |
| MIN | 204 | 200 | 281 | 270 | 348 | 274 | 195 | 436 | 634 | 260 | 185 | 182 |
| AC-FT | 16470 | 33230 | 20560 | 31450 | 24770 | 18210 | 18400 | 403400 | 400800 | 22070 | 12780 | 35350 |

CAL YR 1979 TOTAL 662910 MEAN 1816 MAX 33600 MIN 200 AC-FT 1315000
WTR YR 1980 TOTAL 523073 MEAN 1429 MAX 39900 MIN 182 AC-FT 1038000

## 07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1944 to April 1946, October 1952 to September 1964, October 1966 to current year. Pesticide analyses: April 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1944 to April 1946, October 1952 to September 1964, October 1966 to current year.
WATER TEMPERATURES: October 1952 to September 1963, October 1966 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 11,100 micromhos July 16, 1972; minimum daily, 176 micromhos Nov. 4, 1958.
WATER TEMPERATURES: Maximum daily, 35.0°C July 13, 1954; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 8,750 micromhos Mar. 6; minimum daily, 1,010 micromhos Sept. 30.
WATER TEMPERATURES: Maximum daily, 32.0°C June 26, July 13, 19, 28; minimum daily, 0.0°C Jan. 31.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TURBIDITY (NTU) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 17... | 1015 | 214 | 6300 | 8.2 | 20.5 | 16 | 7.8 | 89 | 6.1 | 150 | 130 |
| NOV 06... | 1045 | 208 | 5700 | 8.3 | 12.0 | 6.0 | 10.0 | 94 | 5.3 | 62 | 30 |
| DEC 05... | 0930 | 390 | 3020 | 8.0 | 6.0 | 170 | 9.2 | 76 | 1.0 | 3400 | 1500 |
| JAN 15... | 1400 | 277 | 6200 | 8.8 | 14.0 | 3.9 | 14.2 | 143 | 6.6 | K16 | 40 |
| FEB 20... | 1615 | 456 | 6900 | 8.9 | 14.0 | 3.2 | >19.5 | >197 | 9.3 | K7 | K13 |
| MAR 18... | 1400 | 292 | 7200 | 8.2 | 13.5 | 7.9 | 10.2 | 100 | 6.5 | 76 | 60 |
| APR 22... | 1515 | 226 | 7900 | 8.3 | 24.0 | 10 | 9.5 | 116 | 7.2 | K23 | K16 |
| MAY 20... | 1610 | 23900 | 1910 | 8.1 | 22.0 | 670 | 6.3 | 73 | 3.4 | 870 | 2700 |
| JUN 10... | 1540 | 5570 | 2970 | 8.2 | 27.0 | 220 | 7.2 | 92 | -- | 440 | 400 |
| JUL 22... | 1630 | 281 | 6450 | 8.3 | 33.0 | 24 | 9.4 | 134 | 4.8 | K20 | K27 |
| AUG 19... | 1400 | 196 | 7070 | 8.3 | 29.0 | 16 | 7.5 | 101 | 7.3 | K27 | K95 |
| SEP 16... | 1500 | 259 | 5750 | 8.5 | 28.0 | 11 | 9.9 | 130 | 11 | K30 | 84 |

| DATE | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 17... | 1200 | 1000 | 300 | 99 | 940 | 12 | 12 | 190 | 0 | 810 | 1600 |
| NOV 06... | 1100 | 940 | 280 | 93 | 850 | 11 | 13 | 180 | 0 | 700 | 1400 |
| DEC 05... | 610 | 470 | 170 | 44 | 410 | 7.3 | 7.8 | 160 | 0 | 410 | 690 |
| JAN 15... | 1100 | 920 | 270 | 95 | 940 | 13 | 10 | 140 | 17 | 740 | 1600 |
| FEB 20... | 1200 | 1000 | 310 | 100 | 1000 | 13 | 9.2 | 140 | 21 | 830 | 1800 |
| MAR 18... | 1300 | 1100 | 320 | 110 | 1100 | 14 | 10 | 170 | 0 | 930 | 1800 |
| APR 22... | 1300 | 1200 | 320 | 120 | 1300 | 16 | 11 | 140 | 1 | 940 | 2100 |
| MAY 20... | 340 | 240 | 100 | 21 | 260 | 6.2 | 7.4 | 110 | 0 | 240 | 420 |
| JUN 10... | 590 | 450 | 170 | 39 | 360 | 6.5 | 9.1 | 180 | 0 | 390 | 590 |
| JUL 22... | 1200 | 1100 | 290 | 110 | 910 | 12 | 13 | 140 | 0 | 900 | 1600 |
| AUG 19... | 1400 | 1300 | 330 | 130 | 1100 | 13 | 14 | 78 | 0 | 1100 | 1900 |
| SEP 16... | 1000 | 980 | 250 | 96 | 860 | 12 | 7.8 | 52 | 3 | 780 | 1500 |

## WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SIO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA TOTAL (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN, ORGANIC TOTAL (MG/L AS N) | NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>17... | .5 | 6.5 | 3980 | 3860 | .05 | .02 | .060 | .060 | .94 | .47 |
| NOV<br>06... | .5 | 4.0 | 3540 | 3430 | -- | -- | -- | .080 | 1.1 | .76 |
| DEC<br>05... | .3 | 8.6 | 1900 | 1820 | .54 | .48 | .230 | .180 | 1.7 | .78 |
| JAN<br>15... | .4 | 1.8 | 3870 | 3740 | .02 | .00 | .020 | .030 | .66 | .40 |
| FEB<br>20... | .5 | 1.8 | 4360 | 4140 | .03 | .03 | .100 | .000 | 1.4 | .63 |
| MAR<br>18... | .4 | .8 | 4620 | 4360 | .00 | .00 | .120 | .000 | 1.3 | .96 |
| APR<br>22... | .6 | .3 | 4970 | 4860 | .01 | .02 | .100 | .080 | 1.9 | .91 |
| MAY<br>20... | .2 | 7.0 | 1160 | 1110 | .27 | .25 | .200 | .130 | 2.7 | .87 |
| JUN<br>10... | .4 | 11 | 1840 | 1660 | .67 | .52 | -- | -- | -- | -- |
| JUL<br>22... | .6 | 7.2 | 4290 | 3900 | .02 | .02 | .060 | .000 | 1.5 | .48 |
| AUG<br>19... | .6 | 7.0 | 4670 | 4620 | .99 | .08 | .050 | -- | -- | -- |
| SEP<br>16... | .6 | 3.9 | 3640 | 3520 | .00 | .00 | .030 | .000 | 2.6 | .69 |

| DATE | NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | CARBON, ORGANIC DIS- SOLVED (MG/L AS C) | CARBON, ORGANIC SUS- PENDED (MG/L AS C) | SEDI- MENT, SUS- PENDED (MG/L) | SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>17... | 1.0 | -- | .290 | .070 | 14 | -- | -- | 32 | 18 | 96 |
| NOV<br>06... | -- | -- | .260 | .020 | 12 | -- | -- | 32 | 18 | 92 |
| DEC<br>05... | 1.9 | .96 | .060 | .000 | 10 | -- | -- | 203 | 214 | 97 |
| JAN<br>15... | .68 | .43 | .210 | .080 | -- | 8.2 | 1.2 | 33 | 25 | 100 |
| FEB<br>20... | 1.5 | .63 | .270 | .080 | 12 | -- | -- | 86 | 106 | 89 |
| MAR<br>18... | 1.4 | .96 | .250 | .080 | -- | 6.7 | 2.9 | 11 | 8.7 | 99 |
| APR<br>22... | 2.0 | .99 | .360 | .030 | 15 | -- | -- | 34 | 21 | 97 |
| MAY<br>20... | 2.9 | 1.0 | 1.500 | .040 | 39 | -- | -- | 4420 | 285000 | 69 |
| JUN<br>10... | -- | -- | .590 | .090 | -- | -- | -- | 1000 | 15000 | 81 |
| JUL<br>22... | 1.6 | .48 | .120 | .020 | -- | 5.2 | 3.7 | 46 | 35 | 95 |
| AUG<br>19... | -- | -- | .020 | .020 | -- | -- | -- | 64 | 34 | 99 |
| SEP<br>16... | 2.6 | .69 | .100 | .030 | -- | 5.8 | <4.0 | 49 | 34 | 98 |

| DATE | TIME | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUS- PENDED TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) | BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA) | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM SUS- PENDED RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC<br>05... | 0930 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN<br>15... | 1400 | 3 | 0 | 3 | 300 | 100 | 200 | 0 | 0 | 0 | 10 |
| FEB<br>20... | 1615 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR<br>18... | 1400 | 3 | 0 | 3 | 300 | 200 | 100 | 0 | 0 | 0 | 10 |
| JUN<br>10... | 1540 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL<br>22... | 1630 | 4 | 1 | 3 | 300 | 100 | 200 | 0 | 0 | 0 | 10 |
| AUG<br>19... | 1400 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP<br>16... | 1500 | 4 | 2 | 2 | 200 | 0 | 200 | 0 | 0 | 0 | 10 |

## RED RIVER BASIN

## [illegible] RED RIVER NEAR [illegible], [illegible]--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER [illegible] TO SEPTEMBER [illegible]

[illegible]

## 07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) | DI-AZINON, TOTAL (UG/L) | DI-ELDRIN TOTAL (UG/L) | DI-ELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | ENDO-SULFAN, TOTAL (UG/L) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN<br>17... | .00 | .0 | .00 | .0 | .02 | .00 | .0 | .00 | .00 | .0 |
| JUL<br>22... | .00 | .0 | .00 | .0 | .00 | .00 | .0 | .00 | .00 | .0 |

| DATE | ETHION, TOTAL (UG/L) | HEPTA-CHLOR, TOTAL (UG/L) | HEPTA-CHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) | HEPTA-CHLOR EPOXIDE TOTAL (UG/L) | HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) | MALA-THION, TOTAL (UG/L) | METH-OXY-CHLOR, TOTAL (UG/L) | METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN<br>17... | .00 | .00 | .0 | .00 | .0 | .00 | .0 | .00 | .00 | .0 |
| JUL<br>22... | .00 | .00 | .0 | .00 | .0 | .00 | .0 | .00 | .00 | .0 |

| DATE | METHYL PARA-THION, TOTAL (UG/L) | METHYL TRI-THION, TOTAL (UG/L) | MIREX, TOTAL (UG/L) | PARA-THION, TOTAL (UG/L) | TOX-APHENE, TOTAL (UG/L) | TOX-APHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) | TOTAL TRI-THION (UG/L) | 2,4-D, TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) | SILVEX, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN<br>17... | .00 | .00 | .00 | .00 | 0 | 0 | .26 | .07 | .00 | .00 |
| JUL<br>22... | .00 | .00 | .00 | .00 | 0 | 0 | .00 | .00 | .00 | .00 |

| DATE | LENGTH OF EXPO-SURE (DAYS) | PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M | PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M | CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) | CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) | BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) |
|---|---|---|---|---|---|---|
| SEP<br>17... | 30 | .000 | .478 | .150 | .000 | 225 |

## 07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE<br>TIME | JAN 15,80<br>1600 | MAR 18,80<br>1420 | MAY 20,80<br>1610 | JUN 10,80<br>1340 |
|---|---|---|---|---|
| TOTAL CELLS/ML | 91000 | 4400 | 210 | 5400 |
| DIVERSITY: DIVISION | 0.9 | 1.0 | 0.0 | 1.3 |
| .CLASS | 1.0 | 1.0 | 0.0 | 1.3 |
| ..ORDER | 1.2 | 1.5 | 0.0 | 2.0 |
| ...FAMILY | 1.2 | 1.8 | 0.9 | 2.8 |
| ....GENUS | 1.3 | 2.4 | 0.9 | 3.1 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | | | |
| .CHLOROPHYCEAE | | | | | | | | |
| ..CHLOROCOCCALES | | | | | | | | |
| ...CHARACIACEAE | | | | | | | | |
| ....SCHROEDERIA | -- | - | * | 0 | -- | - | -- | - |
| ...COELASTRACEAE | | | | | | | | |
| ....COELASTRUM | -- | - | -- | - | -- | - | -- | - |
| ...MICRACTINIACEAE | | | | | | | | |
| ....MICRACTINIUM | -- | - | -- | - | -- | - | 60 | 1 |
| ...OOCYSTACEAE | | | | | | | | |
| ....ANKISTRODESMUS | 1800 | 2 | 470 | 11 | -- | - | 80 | 2 |
| ....CHLORELLA | -- | - | 27 | 1 | -- | - | -- | - |
| ....DICTYOSPHAERIUM | 1800 | 2 | 220 | 5 | -- | - | 270 | 5 |
| ....KIRCHNERIELLA | 1300 | 2 | 96 | 2 | -- | - | -- | - |
| ....OOCYSTIS | -- | - | 290 | 7 | -- | - | 60 | 1 |
| ....SELENASTRUM | -- | - | -- | - | -- | - | -- | - |
| ....TETRAEDRON | -- | - | -- | - | -- | - | -- | - |
| ...SCENEDESMACEAE | | | | | | | | |
| ....CRUCIGENIA | -- | - | -- | - | -- | - | 330 | 6 |
| ....SCENEDESMUS | -- | - | 340 | 8 | -- | - | 550 | 10 |
| ..VOLVOCALES | | | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | | | |
| ....CARTERIA | -- | - | -- | - | -- | - | * | 0 |
| ....CHLAMYDOMONAS | 13000 | 14 | * | 0 | -- | - | 86 | 2 |
| ...POLYBLEPHARIDACEAE | | | | | | | | |
| ....PYRAMIMONAS | 870 | 1 | -- | - | -- | - | -- | - |
| ..ZYGNEMATALES | | | | | | | | |
| ...DESMIDIACEAE | | | | | | | | |
| ....CLOSTERIUM | -- | - | -- | - | -- | - | -- | - |
| CHRYSOPHYTA | | | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | | | |
| ..CENTRALES | | | | | | | | |
| ...COSCINODISCACEAE | | | | | | | | |
| ....CYCLOTELLA | 68000 | 75 | * | 0 | -- | - | 670 | 12 |
| ....MELOSIRA | -- | - | -- | - | -- | - | * | 0 |
| ..PENNALES | | | | | | | | |
| ...NAVICULACEAE | | | | | | | | |
| ....[illegible] | -- | - | -- | - | -- | - | * | 0 |
| ....[illegible] | -- | - | * | 0 | -- | - | -- | - |
| ....NAVICULA | -- | - | * | 0 | 750 | 33 | 80 | 2 |
| ...NITZSCHIACEAE | | | | | | | | |
| ....NITZSCHIA | -- | - | -- | - | 1400 | 67 | 60 | 1 |
| ...SURIRELLACEAE | | | | | | | | |
| ....SURIRELLA | -- | - | -- | - | -- | - | 27 | 1 |
| .[illegible] | | | | | | | | |
| ..[illegible] | | | | | | | | |
| ...[illegible] | | | | | | | | |
| ....[illegible] | 11000 | 8 | -- | - | -- | - | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | | | |
| .CYANOPHYCEAE | | | | | | | | |
| ..CHROOCOCCALES | | | | | | | | |
| ...CHROOCOCCACEAE | | | | | | | | |
| ....[illegible] | -- | - | 110 | 3 | -- | - | -- | - |
| ....[illegible] | -- | - | [illegible] | [illegible] | -- | - | 270 | 5 |
| ..[illegible] | | | | | | | | |
| ...[illegible] | | | | | | | | |
| ....[illegible] | -- | - | 530 | 13 | -- | - | -- | - |
| ....[illegible] | -- | - | -- | - | -- | - | -- | - |
| ....[illegible] | -- | - | -- | - | -- | - | -- | - |
| ...[illegible] | | | | | | | | |
| ....[illegible] | -- | - | -- | - | -- | - | -- | - |
| ....[illegible] | -- | - | -- | - | -- | - | [illegible] | 27 |
| ...[illegible] | | | | | | | | |
| ....[illegible] | -- | - | -- | - | -- | - | 790 | 16 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | | | |
| .EUGLENOPHYCEAE | | | | | | | | |
| ..EUGLENALES | | | | | | | | |
| ...EUGLENACEAE | | | | | | | | |
| ....EUGLENA | 1500 | 2 | -- | - | -- | - | 40 | 1 |
| ....PHACUS | -- | - | -- | - | -- | - | * | 0 |
| ....TRACHELOMONAS | -- | - | -- | - | -- | - | 60 | 1 |
| PYRRHOPHYTA (FIRE ALGAE) | | | | | | | | |
| .DINOPHYCEAE | | | | | | | | |
| ..PERIDINIALES | | | | | | | | |
| ...[illegible] | | | | | | | | |
| ....[illegible] | -- | - | -- | - | -- | - | * | 0 |
| ...[illegible] | | | | | | | | |
| ....[illegible] | -- | - | -- | - | -- | - | -- | - |

NOTE: [illegible]

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE | JUL 22,80 | AUG 19,80 | SEP 16,80 |
|---|---|---|---|
| TIME | 1630 | 1400 | 1500 |
| TOTAL CELLS/ML | 260000 | 380000 | 400000 |
| DIVERSITY: DIVISION | 0.3 | 0.1 | 0.1 |
| .CLASS | 0.3 | 0.1 | 0.1 |
| ..ORDER | 0.7 | 0.5 | 0.6 |
| ...FAMILY | 0.8 | 0.8 | 1.6 |
| ....GENUS | 0.8 | 1.0 | 2.4 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | -- | - | -- | - | -- | - |
| ...COELASTRACEAE | | | | | | |
| ....COELASTRUM | 2300 | 1 | -- | - | -- | - |
| ...MICRACTINIACEAE | | | | | | |
| ....MICRACTINIUM | * | 0 | -- | - | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | -- | - | * | 0 | * | 0 |
| ....CHLORELLA | -- | - | -- | - | -- | - |
| ....DICTYOSPHAERIUM | -- | - | -- | - | -- | - |
| ....KIRCHNERIELLA | -- | - | -- | - | -- | - |
| ....OOCYSTIS | 1600 | 1 | * | 0 | * | 0 |
| ....SELENASTRUM | * | 0 | -- | - | * | 0 |
| ....TETRAEDRON | * | 0 | -- | - | -- | - |
| ...SCENEDESMACEAE | | | | | | |
| ....CRUCIGENIA | -- | - | -- | - | -- | - |
| ....SCENEDESMUS | 1600 | 1 | 3100 | 1 | * | 0 |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CARTERIA | -- | - | -- | - | -- | - |
| ....CHLAMYDOMONAS | * | 0 | * | 0 | -- | - |
| ...POLYBLEPHARIDACEAE | | | | | | |
| ....PYRAMIMONAS | -- | - | -- | - | -- | - |
| ..ZYGNEMATALES | | | | | | |
| ...DESMIDIACEAE | | | | | | |
| ....COSMARIUM | * | 0 | -- | - | -- | - |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | * | 0 | * | 0 | -- | - |
| ....MELOSIRA | -- | - | -- | - | -- | - |
| ..PENNALES | | | | | | |
| ...NAVICULACEAE | | | | | | |
| ....CALONEIS | -- | - | -- | - | -- | - |
| ....[illegible] | -- | - | -- | - | -- | - |
| ....NAVICULA | -- | - | * | 0 | * | 0 |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | * | 0 | * | 0 | * | 0 |
| ...SURIRELLACEAE | | | | | | |
| ....SURIRELLA | -- | - | -- | - | -- | - |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | -- | - | -- | - | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..[illegible] | | | | | | |
| ...[illegible] | | | | | | |
| ....[illegible] | [illegible] | [illegible] | [illegible] | [illegible] | * | 0 |
| ....[illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| ..[illegible] | | | | | | |
| ...[illegible] | | | | | | |
| ....[illegible] | [illegible] | [illegible] | -- | - | [illegible] | [illegible] |
| ....[illegible] | -- | - | [illegible] | [illegible] | [illegible] | [illegible] |
| ....[illegible] | -- | - | [illegible] | [illegible] | -- | - |
| ...[illegible] | | | | | | |
| ....[illegible] | -- | - | [illegible] | [illegible] | [illegible] | [illegible] |
| ....[illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| ...[illegible] | | | | | | |
| ....[illegible] | -- | - | -- | - | [illegible] | [illegible] |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....EUGLENA | -- | - | -- | - | -- | - |
| ....PHACUS | -- | - | -- | - | -- | - |
| ....TRACHELOMONAS | -- | - | -- | - | -- | - |
| PYRRHOPHYTA (FIRE ALGAE) | | | | | | |
| .[illegible] | | | | | | |
| ..[illegible] | | | | | | |
| ...[illegible] | | | | | | |
| ....[illegible] | -- | - | -- | - | -- | - |
| ...[illegible] | | | | | | |
| ....[illegible] | -- | - | -- | - | * | 0 |

NOTE: * = [illegible]
-- = [illegible]

## 07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 8301 | 5730 | 3480 | 78100 | 1400 | 32000 | 710 | 16000 | 1000 |
| NOV. | 1979 | 16751 | 3630 | 2190 | 98900 | 890 | 40200 | 450 | 20200 | 690 |
| DEC. | 1979 | 10364 | 4970 | 3010 | 84200 | 1200 | 34400 | 620 | 17200 | 910 |
| JAN. | 1980 | 15854 | 4450 | 2680 | 115000 | 1100 | 46800 | 550 | 23500 | 840 |
| FEB. | 1980 | 12487 | 6590 | 4040 | 136000 | 1700 | 56100 | 830 | 28000 | 1100 |
| MAR. | 1980 | 9183 | 7580 | 4680 | 116000 | 1900 | 48000 | 970 | 23900 | 1200 |
| APR. | 1980 | 9279 | 6300 | 3850 | 96500 | 1600 | 39600 | 790 | 19800 | 1100 |
| MAY | 1980 | 203402 | 2040 | 1200 | 660000 | 480 | 263400 | 240 | 133900 | 420 |
| JUNE | 1980 | 202060 | 1850 | 1090 | 595000 | 440 | 239500 | 220 | 120800 | 380 |
| JULY | 1980 | 11126 | 6650 | 4080 | 122000 | 1700 | 50480 | 840 | 25200 | 1100 |
| AUG. | 1980 | 6643 | 6830 | 4190 | 72900 | 1700 | 30000 | 860 | 15000 | 1200 |
| SEPT | 1980 | 17823 | 2800 | 1690 | 81400 | 690 | 33200 | 350 | 16600 | 520 |
| TOTAL | | 523073 | ** | ** | 2237000 | ** | 916000 | ** | 460000 | ** |
| WTD. AVG. | | 1429 | 2670 | 1600 | ** | 650 | ** | 330 | ** | 520 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980 ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6440 | 6960 | 3060 | 6560 | 5050 | 7980 | 6850 | 4500 | 1090 | 6770 | 6580 | 6870 |
| 2 | 6380 | 5100 | 3100 | 3550 | 6030 | 8010 | 6910 | 3730 | 1150 | 6800 | 6700 | 6820 |
| 3 | 6320 | 5200 | 3160 | 4620 | 6320 | 8190 | 6200 | 4890 | 1210 | 6690 | 6690 | 6670 |
| 4 | 6440 | 5220 | 3160 | 4600 | 6440 | 8380 | 4820 | 5250 | 1270 | 6610 | 6700 | 6620 |
| 5 | 6540 | 5560 | 3020 | 4580 | 6920 | 8550 | 5500 | 5560 | 1600 | 6570 | 6560 | 6480 |
| 6 | 6570 | 5060 | 3560 | 4550 | 6930 | 8750 | 5960 | 5860 | 1540 | 6060 | 6580 | 6400 |
| 7 | 6450 | 6120 | 4250 | 4530 | 7060 | 8360 | 4220 | 6110 | 1680 | 6430 | 6440 | 6360 |
| 8 | 6400 | 6420 | 4500 | 4850 | 6060 | 8160 | 5050 | 6370 | 1810 | 6740 | 6410 | 6520 |
| 9 | 6430 | 5000 | 4920 | 5160 | 5750 | 8020 | 5700 | 6620 | 2790 | 6850 | 6440 | 6370 |
| 10 | 6460 | 4880 | 4860 | 5340 | 5320 | 7850 | 5660 | 6960 | 2970 | 7020 | 6460 | 6330 |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | --- | [illegible] | [illegible] | --- | [illegible] | --- | [illegible] | --- | [illegible] | [illegible] | --- |
| MEAN | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

## 07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 27.0 | 13.5 | 5.0 | 10.5 | 1.0 | 3.5 | 19.0 | 24.0 | 26.5 | 31.0 | 30.5 | 31.0 |
| 2 | 25.5 | 13.0 | 6.0 | 8.5 | 4.0 | 5.5 | 18.5 | 24.0 | 27.5 | 30.0 | 30.5 | 30.0 |
| 3 | 21.0 | 16.0 | 6.0 | 9.0 | 7.5 | 10.0 | 18.0 | 24.5 | 27.5 | 29.5 | 29.0 | --- |
| 4 | 21.0 | 15.5 | 7.5 | 9.5 | 8.5 | 10.0 | 19.0 | 24.5 | 28.0 | 29.5 | 26.5 | 31.0 |
| 5 | 23.5 | 15.0 | 9.0 | 8.5 | 9.0 | 9.5 | 21.0 | 20.0 | 28.5 | 30.0 | 30.5 | 29.5 |
| 6 | 20.5 | 13.0 | 9.5 | 10.0 | 10.0 | 10.0 | 22.0 | 24.0 | 28.0 | 30.5 | 27.5 | 29.0 |
| 7 | 21.5 | 11.5 | 8.5 | 5.0 | 6.5 | 11.5 | 22.5 | 23.0 | 27.5 | 31.0 | 30.0 | 29.0 |
| 8 | 21.0 | 10.5 | 9.5 | 4.5 | 5.0 | 13.0 | 20.5 | 20.5 | 27.0 | 31.5 | 31.0 | 29.5 |
| 9 | 17.5 | 11.0 | 10.0 | 8.0 | 2.5 | 15.0 | 22.0 | 23.5 | 28.0 | 31.0 | 31.5 | 26.5 |
| 10 | 17.5 | 10.5 | 12.5 | 7.0 | 3.0 | 17.0 | 18.5 | 24.5 | 28.5 | 31.0 | 29.5 | 30.5 |
| 11 | 20.5 | 10.0 | 17.5 | 9.5 | 5.0 | 14.5 | 19.0 | 23.0 | 27.5 | 31.5 | 29.5 | 30.5 |
| 12 | 19.0 | 9.0 | 5.5 | 10.0 | 6.5 | 15.5 | 10.0 | 27.5 | 27.5 | 30.0 | 29.0 | 29.5 |
| 13 | 20.0 | 11.5 | 7.0 | 10.5 | 8.5 | 15.5 | 10.5 | 26.0 | 28.5 | 32.0 | 29.5 | 30.0 |
| 14 | 15.0 | 10.5 | 11.0 | 10.0 | 10.5 | 15.0 | 19.0 | 25.5 | 28.5 | 31.5 | 30.0 | 26.5 |
| 15 | 17.5 | 13.5 | 11.5 | 10.5 | 5.0 | 15.5 | 19.5 | 22.5 | 28.0 | 31.5 | 30.0 | 30.0 |
| 16 | 20.0 | 12.0 | 5.5 | 13.0 | 3.5 | 16.0 | 19.5 | 22.0 | 28.5 | 30.5 | 30.5 | 29.5 |
| 17 | 21.0 | 11.5 | 3.0 | 11.5 | 4.5 | 15.0 | 20.0 | 21.0 | 27.5 | 31.0 | 29.5 | 27.5 |
| 18 | 23.0 | 17.0 | 6.0 | 12.5 | 5.5 | 14.0 | 22.0 | 21.5 | 29.0 | 31.5 | 26.5 | 28.0 |
| 19 | 24.0 | 18.0 | 6.5 | 12.0 | 10.5 | 14.5 | 24.5 | --- | 27.0 | 32.0 | 30.5 | 28.5 |
| 20 | 25.0 | 20.0 | 9.0 | 8.5 | 16.0 | 15.0 | 25.0 | 22.0 | 29.0 | 30.5 | 30.0 | 28.5 |
| 21 | 25.0 | 17.5 | 8.0 | 8.5 | 15.0 | 16.5 | 25.0 | 22.0 | 28.5 | 29.0 | 30.5 | 27.0 |
| 22 | 18.5 | 12.0 | 7.5 | 8.0 | 15.5 | 15.0 | 24.0 | 24.5 | 29.0 | 31.0 | 31.0 | 28.0 |
| 23 | 18.5 | 10.5 | 7.0 | 8.5 | 13.0 | 15.0 | 24.0 | 26.0 | 28.5 | 31.0 | 29.5 | 25.5 |
| 24 | 18.0 | 12.5 | 10.0 | 8.0 | 13.0 | 14.0 | 23.0 | 27.0 | 29.5 | 30.5 | 31.5 | 25.5 |
| 25 | 18.5 | 12.0 | 13.0 | 8.0 | 10.0 | 14.5 | 20.0 | 26.0 | 28.5 | 30.5 | 27.0 | 26.0 |
| 26 | 18.0 | 10.5 | 12.0 | 6.0 | 13.5 | 15.5 | 17.0 | 27.5 | 32.0 | 30.0 | 30.0 | 25.0 |
| 27 | 22.0 | 10.5 | 13.5 | 5.0 | 14.0 | 14.5 | 18.0 | 26.5 | 30.5 | 29.5 | 30.0 | 19.0 |
| 28 | 17.5 | 8.0 | 10.0 | 4.5 | 16.0 | 15.5 | 20.5 | 27.5 | 31.0 | 32.0 | 27.0 | 15.0 |
| 29 | 21.5 | 5.5 | 10.5 | 3.0 | 15.0 | 15.0 | 20.5 | 26.5 | 30.0 | 31.0 | 29.0 | 16.5 |
| 30 | 17.5 | 4.5 | 8.5 | 3.5 | --- | 15.0 | 20.0 | 26.0 | 30.5 | 30.0 | 25.5 | 17.5 |
| 31 | 13.5 | --- | 7.5 | .0 | --- | 13.0 | --- | 25.5 | --- | 30.5 | 25.5 | --- |
| MEAN | 20.5 | 12.0 | 9.0 | 8.0 | 9.0 | 13.5 | 20.0 | 24.5 | 28.5 | 30.5 | 29.5 | 27.0 |

## 07331500 LAKE TEXOMA NEAR DENISON, TX

**LOCATION.**--Lat 33°49'05", long 96°34'20", in NE1/4 sec.33, T.8 S., R.7 E., Bryan County, Okla., Hydrologic Unit 11130210, in control tower of Denison Dam on Red River, 1.2 mi (1.9 km) upstream from Shawnee Creek, 1.8 mi (2.9 km) upstream from Sand Creek, 4.0 mi (6.4 km) northwest of Denison, and at mile 725.9 (1,168.0 km).

**DRAINAGE AREA.**--39,719 mi² (102,872 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

**PERIOD OF RECORD.**--July 1942 to current year. Monthend contents only for some periods, published in WSP 1311.

**REVISED RECORDS.**--WSP 1211: Drainage area.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Mar. 30, 1944, nonrecording gage at same site and datum. Prior to Oct. 1, 1948, supplementary nonrecording gage in Cumberland pool at the same datum.

**REMARKS.**--The lake is formed by a rolled earthfill dam. The controlled outlet consists of eight 20-foot-diameter (508 mm) conduits, and the uncontrolled outlet is a concrete ogee-type weir spillway. Flow was diverted through conduits July 27, 1942; regulated storage began Oct. 31, 1943; power pool was first filled Mar. 15, 1945. Dead storage, 11,000 acre-ft (13.6 hm³) at elevation 610.0 ft (185.93 m) in Cumberland pool. When contents are below 2,105,000 acre-ft (2.60 km³), the lake is divided into two pools by protective levees around the Cumberland oilfield on the Washita River arm, with bottom of outlet channel for the upper pool (known as Cumberland pool) at elevation 610.0 ft (185.93 m). At higher elevations the two pools are considered as being at a common level, contents being computed from gage in Denison pool. The lake is used principally for flood control and power development. Revised capacity table, based on survey in 1969, used since Oct. 1, 1977. Figures given herein represent total contents of both pools. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 670.0 | - |
| Crest of spillway | 640.0 | 5,312,000 |
| Top of maximum power pool | 617.0 | 2,643,000 |
| Bottom of minimum power pool (in Denison pool) | 590.0 | 1,031,000 |

**COOPERATION.**--Records furnished by the Corps of Engineers.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 5,991,300 acre-ft (7.39 km³) June 5, 1957, elevation, 643.18 ft (196.041 m); minimum since power pool was first filled, 1,565,100 acre-ft (1.93 km³) Sept. 16, 1964; minimum elevation, 599.96 ft (182.868 m) Mar. 1, 2, 1957.

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 2,843,000 acre-ft (3.51 km³) June 6, elevation, 619.29 ft (188.760 m); minimum, 2,183,000 acre-ft (2.69 km³) Sept. 26, elevation, 611.10 ft (186.263 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 609.0 | 2,037,000 | 614.0 | 2,399,000 |
| 610.0 | 2,105,000 | 617.0 | 2,643,000 |
| 612.0 | 2,248,000 | 621.0 | 3,018,000 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2550000 | 2438000 | 2422000 | 2412000 | 2373000 | 2309000 | 2274000 | 2240000 | 2738000 | 2678000 | 2488000 | 2293000 |
| 2 | 2542000 | 2435000 | 2419000 | 2417000 | 2374000 | 2298000 | 2276000 | 2236000 | 2805000 | 2671000 | 2485000 | 2293000 |
| 3 | 2534000 | 2432000 | 2418000 | 2414000 | 2375000 | 2290000 | 2276000 | 2239000 | 2843000 | 2666000 | 2482000 | 2290000 |
| 4 | 2526000 | 2429000 | 2419000 | 2414000 | 2375000 | 2296000 | 2275000 | 2241000 | 2847000 | 2664000 | 2477000 | 2282000 |
| 5 | 2521000 | 2431000 | 2419000 | 2413000 | 2375000 | 2293000 | 2276000 | 2245000 | 2823000 | 2661000 | 2467000 | 2276000 |
| 6 | 2517000 | 2426000 | 2415000 | 2416000 | 2374000 | 2291000 | 2277000 | 2244000 | 2809000 | 2640000 | 2462000 | 2271000 |
| 7 | 2511000 | 2419000 | 2416000 | 2417000 | 2377000 | 2290000 | 2275000 | 2242000 | 2803000 | 2636000 | 2456000 | 2267000 |
| 8 | 2504000 | 2420000 | 2414000 | 2410000 | 2381000 | 2292000 | 2274000 | 2243000 | 2793000 | [illegible] | 2446000 | 2260000 |
| 9 | 2500000 | 2420000 | 2415000 | 2407000 | 2391000 | 2293000 | 2274000 | 2242000 | 2781000 | 2634000 | 2438000 | 2258000 |
| 10 | 2493000 | 2418000 | 2415000 | 2407000 | 2389000 | 2294000 | 2270000 | 2245000 | 2765000 | 2624000 | 2435000 | 2248000 |
| 11 | 2483000 | 2417000 | 2420000 | 2409000 | [illegible] | 2290000 | 2278000 | 2247000 | 2748000 | 2611000 | 2427000 | 2241000 |
| 12 | 2480000 | 2412000 | [illegible] | [illegible] | 2388000 | 2296000 | 2277000 | 2247000 | 2732000 | 2603000 | 2418000 | 2231000 |
| 13 | 2475000 | 2411000 | 2421000 | [illegible] | [illegible] | 2296000 | 2272000 | 2248000 | 2725000 | 2595000 | 2408000 | 2226000 |
| 14 | 2471000 | [illegible] | 2420000 | [illegible] | 2393000 | 2291000 | 2267000 | 2246000 | 2722000 | [illegible] | 2398000 | 2226000 |
| 15 | [illegible] | [illegible] | 2419000 | [illegible] | [illegible] | [illegible] | 2265000 | [illegible] | 2721000 | [illegible] | 2390000 | 2218000 |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2716000 | 2571000 | 2385000 | 2214000 |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2383000 | 2209000 |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2377000 | 2205000 |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2366000 | 2200000 |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2357000 | 2198000 |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2349000 | 2194000 |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2343000 | 2192000 |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2340000 | 2187000 |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2337000 | 2187000 |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2332000 | 2184000 |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2327000 | 2183000 |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2317000 | 2215000 |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2309000 | 2264000 |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2300000 | 2295000 |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2298000 | 2313000 |
| 31 | [illegible] | --- | [illegible] | [illegible] | --- | [illegible] | --- | [illegible] | --- | [illegible] | 2296000 | --- |
| MAX | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2488000 | 2313000 |
| MIN | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 2296000 | 2183000 |
| a | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 612.66 | 612.88 |
| b | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

CAL YR 1979 [illegible]
WTR YR 1980 [illegible]

a Elevation, in feet, at end of month.
b Change in contents, in acre-feet.

## 07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX

**LOCATION.**--Lat 33°49'08", long 96°33'47", Grayson County, Hydrologic Unit 11140101, on right bank 1,800 ft (549 m) downstream from Denison Dam powerhouse, 0.4 mi (0.6 km) upstream from Shawnee Creek (spillway flow return), 4.5 mi (7.2 km) north of Denison, and at mile 725.5 (1,167.3 km).

**DRAINAGE AREA.**--39,720 mi² (102,875 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing. At site used prior to October 1961, drainage area 39,777 mi² (103,022 km²), of which 5,936 mi² (15,374 km²) probably was noncontributing.

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1923 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to October 1934, published as "near Denison, Tex.", and October 1934 to September 1961, published as "near Colbert, Okla.". Gage-height records collected at various sites in this vicinity during periods 1892-93, 1906-28, and 1931-49 are contained in reports of the National Weather Service.

**REVISED RECORDS.**--WSP 807: 1935(M). WSP 1211: Drainage area. WSP 1241: 1924-29, 1932-33, 1934(M), 1935.

**GAGE.**--Water-stage recorder. Datum of gage is 500.00 ft (152.400 m) National Geodetic Vertical Datum of 1929. Oct. 9, 1923, to Sept. 24, 1934, nonrecording gage, and July 29, 1942, to Sept. 30, 1961, water-stage recorder at county road bridge 2.5 mi (4.0 km) downstream. Prior to Oct. 1, 1931, at datum 6.85 ft (2.088 m) higher; Oct. 1, 1931, to Sept. 24, 1934, at datum 7.07 ft (2.155 m) higher; and July 29, 1942, to Sept. 30, 1961, at datum 2.64 ft (0.805 m) lower. Sept. 25, 1934, to July 28, 1942, water-stage recorder at railway bridge 1.9 mi (3.1 km) downstream at datum 7.36 ft (2.243 m) higher.

**REMARKS.**--Water-discharge records fair. Flow regulated since October 1943 by Lake Texoma (station 07331500).

**COOPERATION.**--Gage-height record and 10 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

**AVERAGE DISCHARGE.**--20 years (water years 1924-43) prior to completion of Denison Dam, 5,684 ft³/s (161.0 m³/s), 4,118,000 acre-ft/yr (5.08 km³/yr); 36 years (water years 1945-80) regulated, 4,245 ft³/s (120.2 m³/s), 3,076,000 acre-ft/yr (3.79 km³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 201,000 ft³/s (5,690 m³/s) May 21, 1935, gage height, 31.8 ft (9.69 m), at site and datum then in use; maximum gage height, 32.0 ft (9.75 m) Apr. 25, 1942, at site and datum used in 1943; minimum daily discharge, 12 ft³/s (0.34 m³/s) Jan. 10, 1944.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood of May 26, 1908, reached a stage of 45.5 ft (13.87 m) at site and datum used July 29, 1942, to Sept. 30, 1961, from records of the National Weather Service.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 33,100 ft³/s (937 m³/s) June 4, 16, gage height, 14.99 ft (4.569 m); minimum daily, 78 ft³/s (2.21 m³/s) Mar. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4650 | 1170 | 156 | 87 | 3130 | 3560 | 133 | 1350 | 1050 | 2970 | 2020 | 259 |
| 2 | 2690 | 795 | 670 | 475 | 195 | 2720 | 492 | 3360 | 7320 | 4420 | 1180 | 213 |
| 3 | 3810 | 906 | 1510 | 1150 | 115 | 3570 | 1570 | 110 | 22800 | 2580 | 902 | 1390 |
| 4 | 2640 | 847 | 474 | 536 | 1040 | 125 | 89 | 96 | 32900 | 1780 | 1750 | 3480 |
| 5 | 2570 | 627 | 1490 | 126 | 804 | 348 | 83 | 473 | 31400 | 2020 | 2460 | 2600 |
| 6 | 1520 | 812 | 730 | 96 | 126 | 108 | 84 | 1350 | 22400 | 893 | 3200 | 2410 |
| 7 | 1530 | 2600 | 149 | 258 | 412 | 1630 | 2840 | 1680 | 15100 | 2380 | 2240 | 1730 |
| 8 | 3770 | 1830 | 94 | 2550 | 1350 | 112 | 211 | 271 | 15100 | 3450 | 4320 | 3050 |
| 9 | 1810 | 901 | 93 | 1260 | 1170 | 105 | 83 | 93 | 15200 | 6050 | 3500 | 2380 |
| 10 | 2130 | 235 | 94 | 856 | 1380 | 101 | 81 | 93 | 15200 | 5550 | 1420 | 3530 |
| 11 | 3830 | 424 | 92 | 601 | 914 | 107 | 83 | 258 | 15200 | 5110 | 4130 | 3570 |
| 12 | 2560 | 2610 | 109 | 1190 | 1190 | 82 | 955 | 807 | 12600 | 3810 | 3810 | 4170 |
| 13 | 823 | 452 | 2150 | 117 | 118 | 94 | 2640 | 242 | 10500 | 2660 | 3880 | 2150 |
| 14 | 416 | 2330 | 112 | 115 | 113 | 2190 | 1580 | 107 | 5390 | 3200 | 4780 | 330 |
| 15 | 80 | 1590 | 512 | 113 | 614 | 107 | 1000 | 116 | 5400 | 4040 | 2240 | 3290 |
| 16 | 1370 | 3420 | 921 | 443 | 4780 | 470 | 748 | 116 | 6590 | 3480 | 2350 | 2380 |
| 17 | 1210 | 483 | 2030 | 131 | 4010 | 1060 | 1820 | 1220 | 6480 | 2220 | 428 | 1330 |
| 18 | 3510 | 127 | 1210 | 2070 | 3040 | 1700 | 1900 | 205 | 6380 | 3770 | 2190 | 2250 |
| 19 | 4870 | 1100 | 1050 | 1210 | 2730 | 136 | 1330 | 122 | 5480 | 233 | 4260 | 804 |
| 20 | 2130 | 745 | 842 | 136 | 3700 | 78 | 355 | 904 | 5600 | 129 | 3600 | 803 |
| 21 | 1280 | 136 | 1000 | 2620 | 1110 | 1060 | 1020 | 1450 | 3650 | 2360 | 3830 | 855 |
| 22 | 1030 | 98 | 169 | 2760 | 4280 | 89 | 183 | 1480 | 4460 | 1400 | 2100 | 1140 |
| 23 | 736 | 98 | 97 | 3380 | 1370 | 96 | 655 | 2250 | 6100 | 1300 | 849 | 1710 |
| 24 | 1610 | 96 | 917 | 2560 | 1870 | 1380 | 408 | 2970 | 3570 | 408 | 616 | 193 |
| 25 | 1190 | 683 | 767 | 169 | 4570 | 1630 | 2500 | 3690 | 4340 | 2170 | 1820 | 120 |
| 26 | 607 | 2190 | 1030 | 1790 | 4830 | 561 | 1630 | 3840 | 4340 | 226 | 1960 | 124 |
| 27 | 132 | 195 | 1560 | 2290 | 2570 | 3550 | 132 | 286 | 3320 | 2560 | 2600 | 168 |
| 28 | 93 | 97 | 1310 | 4900 | 1620 | 826 | 651 | 2800 | 545 | 3770 | 3000 | 368 |
| 29 | 1510 | 879 | 94 | 5380 | 3230 | 830 | 2210 | 3330 | 197 | 3760 | 3630 | 184 |
| 30 | 2580 | 2270 | 87 | 222 | --- | 423 | 1110 | 3350 | 4870 | 4340 | 282 | 1620 |
| 31 | 133 | --- | 88 | 2090 | --- | 1680 | --- | 714 | --- | 3790 | 231 | --- |
| TOTAL | 58620 | 30542 | 21383 | 41681 | 56371 | 30535 | 28576 | 38153 | 295702 | 87049 | 75670 | 48601 |
| MEAN | 1891 | 1018 | 690 | 1345 | 1944 | 985 | 953 | 1231 | 9857 | 2808 | 2441 | 1620 |
| MAX | 4870 | 3420 | 2150 | 5380 | 4830 | 3570 | 2840 | 3840 | 32900 | 6050 | 4780 | 6170 |
| MIN | 80 | 96 | 87 | 87 | 113 | 78 | 81 | 93 | 197 | 129 | 231 | 120 |
| AC-FT | 116300 | 60580 | 42410 | 82670 | 111800 | 60610 | 56680 | 75680 | 586500 | 172700 | 150100 | 96400 |

CAL YR 1979 TOTAL 1086419 MEAN 2971 MAX 30700 MIN 50 AC-FT 2151000
WTR YR 1980 TOTAL 813113 MEAN 2222 MAX 32900 MIN 78 AC-FT 1613000

## 07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1944 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1944 to current year.
WATER TEMPERATURES: October 1945 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (1944-69, 1972-80): Maximum daily, 3,520 micromhos Aug. 14, 1944; minimum daily, 656 micromhos Oct. 16, 1945.
WATER TEMPERATURES (1945-69): Maximum daily, 31.0°C July 17, 1969; minimum daily, 3.0°C Feb. 2-4, 7, 1966.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,510 micromhos May 8; minimum daily, 1,870 micromhos Oct. 4-7.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) | STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | | |
| 17... | 1300 | 209 | 1920 | 8.0 | 21.0 | 4.8 | 7.1 | 81 | 1.3 | 300 | 430 |
| NOV | | | | | | | | | | | |
| 06... | 1630 | 293 | 1930 | 8.4 | 18.0 | 1.6 | 11.4 | 121 | 1.1 | 32 | 160 |
| DEC | | | | | | | | | | | |
| 05... | 1345 | 723 | 1920 | 8.4 | 13.0 | 2.2 | 11.5 | 112 | .7 | K2 | 20 |
| JAN | | | | | | | | | | | |
| 16... | 0945 | 107 | 1910 | 7.9 | 10.0 | 1.9 | 10.5 | 93 | 2.0 | 21 | 83 |
| FEB | | | | | | | | | | | |
| 11... | 1410 | 132 | 1950 | 8.4 | 6.5 | 3.2 | 16.1 | 133 | 1.2 | K2 | K18 |
| MAR | | | | | | | | | | | |
| 19... | 0815 | 107 | 2000 | 8.0 | 8.0 | 1.6 | 11.5 | 98 | 1.1 | <1 | K3 |
| APR | | | | | | | | | | | |
| 23... | 1115 | 96 | 2050 | 7.9 | 15.0 | 2.2 | 11.9 | 120 | 1.3 | K5 | 21 |
| MAY | | | | | | | | | | | |
| 12... | 1320 | 107 | 2250 | 8.1 | 20.0 | 1.7 | 8.5 | 96 | 1.1 | 36 | 100 |
| JUN | | | | | | | | | | | |
| 02... | 1330 | 9890 | 2200 | 7.8 | 17.5 | 2.6 | 4.6 | 49 | .9 | 21 | 22 |
| JUL | | | | | | | | | | | |
| 14... | 1220 | 5000 | 2180 | 7.6 | 28.0 | 1.4 | 3.8 | 49 | 1.0 | K6 | K2 |
| AUG | | | | | | | | | | | |
| 26... | 1100 | 170 | 2060 | 7.5 | 25.5 | 1.8 | 3.1 | 38 | 1.2 | 32 | 84 |
| SEP | | | | | | | | | | | |
| 17... | 0800 | 173 | 2100 | 7.4 | 24.0 | 13 | 1.8 | 22 | 2.3 | 43 | 20 |

| DATE | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | | |
| 17... | 370 | 270 | 100 | 29 | 240 | 5.4 | 7.6 | 120 | 0 | 270 | 390 |
| NOV | | | | | | | | | | | |
| 06... | 360 | 250 | 95 | 29 | 240 | 5.5 | 8.4 | 120 | 3 | 270 | 390 |
| DEC | | | | | | | | | | | |
| 05... | 380 | 270 | 100 | 31 | 260 | 5.8 | 6.3 | 120 | 3 | 270 | 380 |
| JAN | | | | | | | | | | | |
| 16... | 370 | 270 | 100 | 30 | 250 | 5.6 | 6.7 | 130 | 0 | 260 | 400 |
| FEB | | | | | | | | | | | |
| 11... | 400 | 310 | 110 | 31 | 250 | 5.4 | 6.8 | 110 | 2 | 280 | 410 |
| MAR | | | | | | | | | | | |
| 19... | 370 | 260 | 100 | 29 | 260 | 5.7 | 6.9 | 150 | 0 | 280 | 420 |
| APR | | | | | | | | | | | |
| 23... | 410 | 300 | 110 | 32 | 250 | 5.4 | 6.9 | 130 | 0 | 250 | 440 |
| MAY | | | | | | | | | | | |
| 12... | 460 | 330 | 130 | 35 | 290 | 6.0 | 8.6 | 160 | 0 | 290 | 490 |
| JUN | | | | | | | | | | | |
| 02... | 440 | 330 | 120 | 34 | 280 | 5.8 | 7.6 | 140 | 0 | 300 | 440 |
| JUL | | | | | | | | | | | |
| 14... | 460 | 310 | 120 | 34 | 280 | 5.8 | 7.0 | 160 | 0 | 280 | 430 |
| AUG | | | | | | | | | | | |
| 26... | 410 | 300 | 110 | 33 | 280 | 6.0 | 8.6 | 130 | 0 | 290 | 460 |
| SEP | | | | | | | | | | | |
| 17... | 400 | 300 | 110 | 33 | 270 | 5.8 | 7.0 | 130 | 0 | 280 | 450 |

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>17... | .3 | 6.1 | 1110 | 1100 | .09 | .05 | .170 | .130 | .55 | .49 |
| NOV<br>06... | .3 | 4.6 | 1110 | 1100 | .08 | .06 | .040 | .070 | .65 | .80 |
| DEC<br>05... | .3 | 3.4 | 1130 | 1110 | .05 | .04 | .010 | .010 | 1.1 | .53 |
| JAN<br>16... | .3 | 3.3 | 1130 | 1110 | .03 | .01 | .030 | .030 | .48 | .37 |
| FEB<br>11... | .3 | 3.6 | 1150 | 1150 | .03 | .03 | .040 | .000 | .66 | .63 |
| MAR<br>19... | .3 | 3.5 | 1210 | 1160 | .00 | .00 | .080 | .020 | .72 | .78 |
| APR<br>23... | .4 | 3.0 | 1250 | 1160 | .01 | .02 | .280 | .180 | 1.2 | .60 |
| MAY<br>12.. | .3 | 3.0 | 1320 | 1300 | .11 | .05 | .100 | .100 | .76 | .52 |
| JUN<br>02... | .3 | 3.9 | 1300 | 1270 | .24 | .19 | .060 | .040 | .64 | .65 |
| JUL<br>14... | .6 | 3.5 | 1290 | 1250 | .09 | .05 | .070 | .090 | .75 | .72 |
| AUG<br>26... | .3 | 3.7 | 1110 | 1250 | .00 | .00 | .220 | .210 | .98 | .89 |
| SEP<br>17... | .4 | 4.5 | 1220 | 1220 | .00 | .00 | .170 | .250 | 2.2 | 1.9 |

| DATE | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | PHOS-PHORUS, DIS-SOLVED (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | CARBON, ORGANIC DIS-SOLVED (MG/L AS C) | CARBON, ORGANIC SUS-PENDED (MG/L AS C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>17... | .72 | .62 | .050 | .010 | 4.3 | -- | -- | 38 | 21 | 11 |
| NOV<br>06... | .69 | .87 | .030 | .010 | 7.2 | -- | -- | 7 | 5.5 | 81 |
| DEC<br>05... | 1.1 | .54 | .050 | .010 | 4.7 | -- | -- | 7 | 14 | 38 |
| JAN<br>16... | .51 | .40 | .040 | .020 | -- | 4.3 | .5 | 3 | .87 | 95 |
| FEB<br>11... | .70 | .63 | .050 | .010 | 6.5 | -- | -- | 3 | 1.1 | 94 |
| MAR<br>19... | .80 | .80 | .030 | .020 | -- | 4.6 | .5 | 4 | 1.2 | 96 |
| APR<br>23... | 1.5 | .78 | .030 | .010 | 6.5 | -- | -- | 5 | 1.3 | 94 |
| MAY<br>12... | .86 | .62 | .030 | .010 | 6.6 | -- | -- | 4 | 1.2 | 93 |
| JUN<br>02... | .70 | .69 | .050 | .030 | 5.4 | -- | -- | 37 | 988 | 30 |
| JUL<br>14... | .82 | .81 | .090 | .040 | -- | 9.0 | -- | 8 | 108 | 37 |
| AUG<br>26... | 1.2 | 1.1 | .120 | .080 | 6.8 | -- | -- | 8 | 3.7 | 100 |
| SEP<br>17... | 2.4 | 2.1 | .130 | .100 | -- | 4.2 | .8 | 4 | 1.9 | 91 |

| DATE | TIME | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUS-PENDED TOTAL (UG/L AS AS) | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) | BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) | CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC<br>05... | 1345 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN<br>16... | 0945 | 1 | 0 | 1 | 300 | 100 | 200 | 1 | 0 | <1 | 0 |
| FEB<br>11... | 1610 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR<br>19... | 0815 | 0 | 0 | 0 | 200 | 0 | 200 | 0 | 0 | <1 | 0 |
| JUN<br>02... | 1330 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL<br>14... | 1220 | 3 | 0 | 3 | 300 | 300 | 0 | 0 | 0 | 0 | 0 |
| AUG<br>26... | 1100 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP<br>17... | 0800 | 3 | 0 | 3 | 200 | 0 | 200 | 0 | 0 | 0 | 10 |

## 07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) | COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) | COBALT, DIS-SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) | COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, TOTAL RECOV-ERABLE (UG/L AS FE) | IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | | | | | | |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN | | | | | | | | | | | |
| 16... | 0 | 0 | 2 | 0 | <3 | 8 | 8 | 0 | 110 | 100 | <10 |
| FEB | | | | | | | | | | | |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR | | | | | | | | | | | |
| 19... | 0 | 0 | 2 | 0 | <3 | 2 | 2 | 0 | 70 | 60 | <10 |
| JUN | | | | | | | | | | | |
| 02... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL | | | | | | | | | | | |
| 14... | 0 | 10 | 0 | 0 | 0 | 2 | 0 | 7 | 80 | 40 | 40 |
| AUG | | | | | | | | | | | |
| 26... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP | | | | | | | | | | | |
| 17... | 10 | 0 | 1 | 1 | 0 | 2 | 2 | 0 | 140 | 130 | 10 |

| DATE | LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) | LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) | MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) | MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) | MERCURY DIS-SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) | NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | | | | | | |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN | | | | | | | | | | | |
| 16... | 4 | 3 | 1 | 50 | 30 | 20 | .0 | .0 | .0 | 2 | 0 |
| FEB | | | | | | | | | | | |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR | | | | | | | | | | | |
| 19... | 2 | 2 | 0 | 30 | 30 | 3 | .1 | .1 | .0 | 5 | 5 |
| JUN | | | | | | | | | | | |
| 02... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL | | | | | | | | | | | |
| 14... | 7 | 4 | 3 | 440 | 10 | 430 | .2 | .1 | .1 | 8 | 4 |
| AUG | | | | | | | | | | | |
| 26... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP | | | | | | | | | | | |
| 17... | 4 | 4 | 0 | 730 | 470 | 260 | .1 | .1 | .0 | 4 | 2 |

| DATE | NICKEL, DIS-SOLVED (UG/L AS NI) | SELE-NIUM, TOTAL (UG/L AS SE) | SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) | SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) | ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | | | | | |
| 05... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| JAN | | | | | | | | | | |
| 16... | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| FEB | | | | | | | | | | |
| 11... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| MAR | | | | | | | | | | |
| 19... | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 10 | 7 | <3 |
| JUN | | | | | | | | | | |
| 02... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| JUL | | | | | | | | | | |
| 14... | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 |
| AUG | | | | | | | | | | |
| 26... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| SEP | | | | | | | | | | |
| 17... | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 |

| DATE | LENGTH OF EXPO-SURE (DAYS) | PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M | PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M | CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) | CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) |
|---|---|---|---|---|---|
| FEB | | | | | |
| 11... | 30 | .000 | .000 | .000 | .000 |

## 07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE<br>TIME | JAN 16,80<br>0945 | | MAR 19,80<br>0815 | | MAY 12,80<br>1320 | | JUN 2,80<br>1330 | | JUL 14,80<br>1220 | | SEP 17,80<br>0800 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTAL CELLS/ML | 61000 | | 22000 | | 570 | | 1400 | | 35000 | | 190000 | |
| DIVERSITY: DIVISION | 0.6 | | 0.5 | | 1.9 | | 0.2 | | 0.3 | | 0.0 | |
| .CLASS | 0.6 | | 0.5 | | 1.9 | | 0.2 | | 0.3 | | 0.0 | |
| ..ORDER | 0.6 | | 0.6 | | 2.4 | | 0.9 | | 0.5 | | 0.4 | |
| ...FAMILY | 0.7 | | 0.6 | | 3.0 | | 1.1 | | 0.6 | | 1.2 | |
| ....GENUS | 0.8 | | 0.7 | | 3.3 | | 1.2 | | 0.6 | | 1.5 | |
| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
| CHLOROPHYTA (GREEN ALGAE) | | | | | | | | | | | | |
| .CHLOROPHYCEAE | | | | | | | | | | | | |
| ..CHLOROCOCCALES | | | | | | | | | | | | |
| ...COELASTRACEAE | | | | | | | | | | | | |
| ....COELASTRUM | -- | - | -- | - | -- | - | -- | - | * | 0 | -- | - |
| ...OOCYSTACEAE | | | | | | | | | | | | |
| ....ANKISTRODESMUS | 330 | 1 | * | 0 | 51 | 9 | -- | - | * | 0 | * | 0 |
| ....CHLORELLA | 4000 | 6 | 590 | 3 | 13 | 2 | -- | - | -- | - | -- | - |
| ....KIRCHNERIELLA | * | 0 | * | 0 | -- | - | 13 | 1 | -- | - | -- | - |
| ....OOCYSTIS | 1600 | 3 | 400 | 2 | 51 | 9 | 1100# | 80 | 380 | 1 | -- | - |
| ....TETRAEDRON | -- | - | -- | - | -- | - | -- | - | * | 0 | -- | - |
| ...SCENEDESMACEAE | | | | | | | | | | | | |
| ....ACTINASTRUM | -- | - | -- | - | -- | - | 51 | 4 | -- | - | -- | - |
| ....SCENEDESMUS | * | 0 | -- | - | 51 | 9 | -- | - | 250 | 1 | -- | - |
| ....TETRASTRUM | * | 0 | -- | - | -- | - | -- | - | -- | - | -- | - |
| ..ULOTRICHALES | | | | | | | | | | | | |
| ...ULOTRICHACEAE | | | | | | | | | | | | |
| ....ULOTHRIX | -- | - | -- | - | -- | - | 140 | 10 | -- | - | -- | - |
| ..VOLVOCALES | | | | | | | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | | | | | | | |
| ....CARTERIA | -- | - | -- | - | -- | - | -- | - | * | 0 | -- | - |
| ....CHLAMYDOMONAS | -- | - | -- | - | -- | - | 26 | 2 | * | 0 | -- | - |
| ..ZYGNEMATALES | | | | | | | | | | | | |
| ...DESMIDIACEAE | | | | | | | | | | | | |
| ....COSMARIUM | -- | - | -- | - | -- | - | 13 | 1 | -- | - | -- | - |
| CHRYSOPHYTA | | | | | | | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | | | | | | | |
| ..CENTRALES | | | | | | | | | | | | |
| ...COSCINODISCACEAE | | | | | | | | | | | | |
| ....CYCLOTELLA | * | 0 | 440 | 2 | 100# | 18 | 26 | 2 | * | 0 | * | 0 |
| ....MELOSIRA | -- | - | * | 0 | -- | - | -- | - | -- | - | -- | - |
| ....THALASSIOSIRA | * | 0 | -- | - | -- | - | -- | - | -- | - | -- | - |
| ..PENNALES | | | | | | | | | | | | |
| ...ACHNANTHACEAE | | | | | | | | | | | | |
| ....ACHNANTHES | -- | - | -- | - | 13 | 2 | -- | - | -- | - | -- | - |
| ....RHOICOSPHENIA | -- | - | -- | - | -- | - | -- | - | * | 0 | -- | - |
| ...CYMBELLACEAE | | | | | | | | | | | | |
| ....CYMBELLA | -- | - | -- | - | 26 | 5 | 13 | 1 | -- | - | -- | - |
| ...FRAGILARIACEAE | | | | | | | | | | | | |
| ....ASTERIONELLA | -- | - | * | 0 | -- | - | -- | - | -- | - | -- | - |
| ....SYNEDRA | -- | - | 290 | 1 | 13 | 2 | -- | - | * | 0 | -- | - |
| ...GOMPHONEMATACEAE | | | | | | | | | | | | |
| ....GOMPHONEMA | * | 0 | -- | - | -- | - | -- | - | -- | - | -- | - |
| ...NAVICULACEAE | | | | | | | | | | | | |
| ....NAVICULA | * | 0 | -- | - | 13 | 2 | -- | - | * | 0 | -- | - |
| ...NITZSCHIACEAE | | | | | | | | | | | | |
| ....NITZSCHIA | * | 0 | -- | - | 26 | 5 | -- | - | * | 0 | * | 0 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | | | | | | | |
| .CRYPTOPHYCEAE | | | | | | | | | | | | |
| ..CRYPTOMONADALES | | | | | | | | | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | | | | | | | | | |
| ....CHROOMONAS | -- | - | -- | - | 64 | 11 | -- | - | -- | - | -- | - |
| ...CRYPTOMONADACEAE | | | | | | | | | | | | |
| ....CRYPTOMONAS | * | 0 | -- | - | -- | - | -- | - | -- | - | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | | | | | | | |
| .CYANOPHYCEAE | | | | | | | | | | | | |
| ..CHROOCOCCALES | | | | | | | | | | | | |
| ...CHROOCOCCACEAE | | | | | | | | | | | | |
| ....AGMENELLUM | -- | - | -- | - | -- | - | -- | - | 200 | 1 | -- | - |
| ....ANACYSTIS | -- | - | -- | - | 13 | 2 | -- | - | 1600 | 5 | 15000 | 8 |
| ..HORMOGONALES | | | | | | | | | | | | |
| ...NOSTOCACEAE | | | | | | | | | | | | |
| ....ANABAENOPSIS | -- | - | -- | - | -- | - | -- | - | -- | - | 37000# | 19 |
| ...OSCILLATORIACEAE | | | | | | | | | | | | |
| ....LYNGBYA | -- | - | -- | - | -- | - | -- | - | -- | - | 9000 | 5 |
| ....OSCILLATORIA | 54000# | 88 | 20000# | 91 | 130# | 23 | -- | - | 33000# | 92 | 120000# | 66 |
| ...RIVULARIACEAE | | | | | | | | | | | | |
| ....RAPHIDIOPSIS | -- | - | -- | - | -- | - | -- | - | -- | - | 2100 | 1 |
| PYRRHOPHYTA (FIRE ALGAE) | | | | | | | | | | | | |
| .DINOPHYCEAE | | | | | | | | | | | | |
| ..PERIDINIALES | | | | | | | | | | | | |
| ...GLENODINIACEAE | | | | | | | | | | | | |
| ....GLENODINIUM | -- | - | -- | - | -- | - | -- | - | * | 0 | -- | - |

NOTE: # = DOMINANT ORGANISM, EQUAL TO OR GREATER THAN 15%
* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 58620 | 1880 | 1090 | 173000 | 370 | 58700 | 250 | 40200 | 400 |
| NOV. | 1979 | 30542 | 1900 | 1100 | 91000 | 370 | 30900 | 260 | 21100 | 400 |
| DEC. | 1979 | 21585 | 1930 | 1120 | 65400 | 380 | 22200 | 260 | 15200 | 400 |
| JAN. | 1980 | 41681 | 1970 | 1150 | 130000 | 390 | 43900 | 270 | 30300 | 410 |
| FEB. | 1980 | 56371 | 2030 | 1190 | 180000 | 400 | 61100 | 280 | 42500 | 410 |
| MAR. | 1980 | 30555 | 2020 | 1180 | 97700 | 400 | 33100 | 280 | 23000 | 410 |
| APR. | 1980 | 28576 | 2060 | 1210 | 93300 | 410 | 31600 | 290 | 22000 | 420 |
| MAY | 1980 | 38153 | 2290 | 1360 | 140000 | 460 | 47400 | 330 | 33900 | 460 |
| JUNE | 1980 | 295702 | 2170 | 1280 | 1021E3 | 430 | 345300 | 310 | 243500 | 430 |
| JULY | 1980 | 87049 | 2170 | 1280 | 300000 | 430 | 101500 | 300 | 71600 | 430 |
| AUG. | 1980 | 75678 | 2140 | 1260 | 257000 | 430 | 86900 | 300 | 61100 | 430 |
| SEPT | 1980 | 48601 | 2090 | 1230 | 161000 | 420 | 54500 | 290 | 38100 | 420 |
| TOTAL | | 813113 | ** | ** | 2710000 | ** | 917000 | ** | 643000 | ** |
| WTD. AVG. | | 2222 | 2100 | 1230 | ** | 420 | ** | 290 | ** | 420 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1880 | 1890 | 1910 | 1940 | 2010 | 2030 | 2060 | 2070 | 2280 | 2170 | 2160 | 2110 |
| 2 | 1880 | 1880 | 1910 | 1950 | 2010 | 2030 | 2070 | 2150 | 2270 | 2170 | 2170 | 2110 |
| 3 | 1880 | 1880 | 1920 | 1950 | 2010 | 2030 | 2060 | 2270 | 2160 | 2180 | 2170 | 2100 |
| 4 | 1870 | 1890 | 1910 | 1940 | 2010 | 2020 | 2050 | 2380 | 2160 | 2180 | 2180 | 2110 |
| 5 | 1870 | 1890 | 1920 | 1940 | 2020 | 2020 | 2050 | 2400 | 2170 | 2170 | 2160 | 2090 |
| 6 | 1870 | 1900 | 1920 | 1940 | 2030 | 2040 | 2050 | 2480 | 2170 | 2170 | 2160 | 2090 |
| 7 | 1870 | 1900 | 1920 | 1940 | 2010 | 2010 | 2050 | 2500 | 2160 | 2160 | 2130 | 2090 |
| 8 | 1880 | 1900 | 1940 | 1960 | 2010 | 2010 | 2060 | 2510 | 2150 | 2160 | 2150 | 2100 |
| 9 | 1880 | 1910 | 1960 | 1980 | 2010 | 2010 | 2070 | 2410 | 2140 | 2170 | 2150 | 2100 |
| 10 | 1880 | 1910 | 1970 | 1950 | 2010 | 2010 | 2060 | 2450 | 2160 | 2150 | 2150 | 2100 |
| 11 | 1880 | 1910 | 1930 | 1950 | 2010 | 2010 | 2060 | 2390 | 2160 | 2170 | 2150 | 2090 |
| 12 | 1890 | 1910 | 1930 | 1960 | 2010 | 2010 | 2060 | 2370 | 2170 | 2170 | 2140 | 2100 |
| 13 | 1890 | 1910 | 1920 | 1960 | 2020 | 2010 | 2060 | 2330 | 2160 | 2170 | 2140 | 2100 |
| 14 | 1890 | 1900 | 1920 | 1960 | 2020 | 2010 | 2060 | 2370 | 2180 | 2160 | 2100 | 2100 |
| 15 | 1890 | 1900 | 1920 | 1990 | 2020 | 2010 | 2060 | 2350 | 2190 | 2180 | 2160 | 2090 |
| 16 | 1900 | 1890 | 1920 | 1970 | 2030 | 2010 | 2060 | 2310 | 2200 | 2160 | 2140 | 2090 |
| 17 | 1900 | 1890 | 1930 | 1980 | 2030 | 2010 | 2060 | 2320 | 2190 | 2170 | 2140 | 2100 |
| 18 | 1900 | 1890 | 1930 | 1970 | 2030 | 2020 | 2060 | 2320 | 2180 | 2170 | 2130 | 2080 |
| 19 | 1890 | 1900 | 1930 | 1970 | 2030 | 2040 | 2060 | 2330 | 2180 | 2170 | 2130 | 2090 |
| 20 | 1890 | 1900 | 1940 | 1970 | 2040 | 2020 | 2040 | 2320 | 2170 | 2170 | 2140 | 2090 |
| 21 | 1890 | 1910 | 1930 | 1970 | 2030 | 2040 | 2060 | 2320 | 2170 | 2170 | 2130 | 2080 |
| 22 | 1890 | 1910 | 1930 | 1970 | 2030 | 2030 | 2060 | 2310 | 2170 | 2170 | 2070 | 2070 |
| 23 | 1890 | 1910 | 1930 | 1970 | 2030 | 2030 | 2060 | 2250 | 2160 | 2170 | 2090 | 2070 |
| 24 | 1890 | 1910 | 1940 | 1990 | 2030 | 2020 | 2060 | 2270 | 2150 | 2170 | 2150 | 2060 |
| 25 | 1900 | 1900 | 1940 | 1970 | 2030 | 2020 | 2070 | 2290 | 2170 | 2170 | 2120 | 2060 |
| 26 | 1890 | 1900 | 1940 | 1980 | 2030 | 2040 | 2070 | 2300 | 2170 | 2170 | 2120 | 2080 |
| 27 | 1890 | 1900 | 1930 | 1980 | 2030 | 2030 | 2070 | 2310 | 2180 | 2170 | 2120 | 2070 |
| 28 | 1890 | 1900 | 1940 | 1980 | 2030 | 2030 | 2060 | 2310 | 2180 | 2170 | 2120 | 2070 |
| 29 | 1890 | 1900 | 1940 | 1980 | 2030 | 2030 | 2070 | 2290 | 2180 | 2160 | 2120 | 2080 |
| 30 | 1890 | 1910 | 1940 | 2000 | --- | 2030 | 2080 | 2290 | 2170 | 2160 | 2110 | 2070 |
| 31 | 1890 | --- | 1940 | 2000 | --- | 2030 | --- | 2280 | --- | 2160 | 2110 | --- |
| MEAN | 1890 | 1900 | 1930 | 1970 | 2020 | 2020 | 2060 | 2330 | 2180 | 2170 | 2130 | 2090 |

## 07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 23.5 | 20.0 | --- | --- | 7.0 | --- | 11.0 | 13.5 | --- | --- | 20.0 | --- |
| 2 | 23.5 | 20.0 | --- | 9.5 | --- | --- | --- | 14.5 | 15.5 | --- | --- | --- |
| 3 | 23.5 | --- | 12.0 | 9.5 | --- | --- | --- | --- | 18.0 | --- | --- | 22.0 |
| 4 | --- | --- | 12.0 | 9.0 | 6.5 | 9.5 | --- | --- | 18.5 | --- | --- | 22.0 |
| 5 | 25.0 | --- | --- | --- | 6.5 | 7.0 | --- | 14.0 | 17.0 | --- | 20.0 | --- |
| 6 | --- | 18.0 | 12.0 | --- | 6.5 | 9.5 | --- | 14.0 | 18.0 | --- | 20.0 | --- |
| 7 | --- | 19.0 | 12.0 | 9.0 | 6.5 | --- | 11.5 | --- | --- | --- | 20.0 | --- |
| 8 | --- | 18.0 | --- | 9.0 | 6.5 | --- | 11.5 | 14.5 | --- | 19.0 | 20.5 | 22.0 |
| 9 | 23.0 | 18.0 | --- | 9.0 | --- | --- | --- | 14.0 | 23.0 | 19.0 | --- | 22.0 |
| 10 | 23.0 | --- | --- | 8.5 | --- | --- | 12.0 | --- | 23.0 | 20.5 | --- | --- |
| 11 | --- | --- | 12.0 | 8.5 | 6.0 | --- | 12.0 | --- | 21.0 | 20.5 | 20.5 | 23.0 |
| 12 | 22.0 | --- | 12.0 | --- | --- | --- | --- | 14.5 | 21.5 | --- | 21.0 | --- |
| 13 | --- | 18.0 | 11.0 | --- | 6.0 | --- | --- | 14.5 | 21.0 | --- | 21.0 | --- |
| 14 | --- | 16.0 | 12.0 | 8.5 | 6.0 | 8.5 | 12.0 | 14.5 | --- | 20.5 | 22.0 | --- |
| 15 | 22.0 | 16.0 | --- | 8.5 | 6.0 | --- | 12.0 | 14.5 | --- | --- | --- | --- |
| 16 | 21.5 | 15.5 | --- | 8.5 | --- | --- | 12.0 | 14.5 | 18.5 | 19.0 | --- | 22.0 |
| 17 | 21.5 | --- | 10.0 | 8.5 | --- | 9.0 | 12.5 | --- | 19.0 | 19.5 | --- | 22.0 |
| 18 | 21.5 | --- | 10.0 | 6.5 | --- | 9.0 | 12.0 | --- | 19.0 | 20.0 | 21.0 | 24.0 |
| 19 | 21.0 | 15.5 | 10.0 | --- | 6.0 | 9.0 | --- | 14.5 | --- | --- | 21.0 | --- |
| 20 | --- | --- | 10.0 | --- | 6.0 | 9.0 | --- | 14.5 | 19.0 | --- | 21.0 | --- |
| 21 | --- | 15.5 | 9.5 | 8.5 | 6.0 | 9.0 | 13.5 | 15.0 | --- | 19.5 | 21.0 | --- |
| 22 | 21.0 | --- | --- | 8.5 | 6.0 | --- | 13.5 | 14.5 | --- | 19.5 | --- | 23.5 |
| 23 | 20.5 | --- | --- | 8.5 | --- | --- | 13.5 | 15.5 | 19.5 | --- | --- | 24.5 |
| 24 | 20.5 | --- | --- | 8.5 | --- | 9.5 | 13.5 | --- | --- | 20.0 | --- | --- |
| 25 | 20.5 | --- | --- | 8.5 | 7.0 | 10.0 | --- | --- | 19.5 | 20.0 | 21.0 | --- |
| 26 | 20.5 | --- | 10.0 | --- | 6.5 | 10.0 | --- | --- | --- | --- | 21.0 | 24.0 |
| 27 | --- | 14.5 | 10.0 | --- | 7.0 | 10.0 | --- | 15.0 | 19.0 | --- | --- | --- |
| 28 | --- | 14.0 | --- | 8.0 | 6.5 | 10.0 | 14.5 | 15.0 | --- | 20.0 | 21.0 | --- |
| 29 | 20.5 | 13.5 | --- | 8.0 | 6.5 | --- | 14.5 | 15.0 | --- | --- | --- | 24.5 |
| 30 | 20.5 | --- | --- | 8.0 | --- | --- | 14.5 | 15.0 | 21.0 | 20.0 | --- | 24.5 |
| 31 | --- | --- | 9.5 | 7.0 | --- | 11.0 | --- | --- | --- | --- | --- | --- |
| MEAN | 22.0 | 17.0 | 11.0 | 8.5 | 6.5 | 9.5 | 12.5 | 14.5 | 19.5 | 20.0 | 21.0 | 23.0 |

## 07332600 BOIS D'ARC CREEK NEAR RANDOLPH, TX

LOCATION.--Lat 33°28'32", long 96°12'52", Fannin County, Hydrologic Unit 11140101, on right bank at downstream side of bridge on State Highway 11, 2.3 mi (3.7 km) upstream from Henson Creek, and 2.4 mi (3.9 km) east of Randolph.

DRAINAGE AREA.--72 mi$^2$ (186 km$^2$).

PERIOD OF RECORD.--November 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 564.38 ft (172.023 m) National Geodetic Vertical Datum of 1929 (State Department of Highways and Public Transportation bench mark).

REMARKS.--Records good. No known diversion or regulation above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--17 years (water years 1964-80), 53.6 ft$^3$/s (1.518 m$^3$/s), 10.11 in/yr (257 mm/yr), 38,830 acre-ft/yr (47.9 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,100 ft$^3$/s (399 m$^3$/s) July 1, 1976, gage height, 23.15 ft (7.056 m); no flow each year except 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1922, 24.6 ft (7.50 m) about 1935, from information by State Department of Highways and Public Transportation and local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,830 ft$^3$/s (137 m$^3$/s) Sept. 29 at 0500 hours, gage height, 13.55 ft (4.130 m), no other peak above base of 4,000 ft$^3$/s (113 m$^3$/s); no flow for many days.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .09 | .00 | .13 | 1.5 | 1.4 | 1.9 | 2.2 | 2.5 | .00 | .00 | .00 |
| 2 | .00 | .05 | .00 | .12 | 1.3 | 1.2 | 1.9 | 2.3 | 2.2 | .00 | .00 | .00 |
| 3 | .00 | .05 | .00 | .13 | 1.4 | 1.2 | 1.7 | 2.2 | 2.1 | .00 | .00 | .00 |
| 4 | .00 | .03 | .00 | .14 | 1.4 | 1.5 | 1.3 | 2.2 | 2.1 | .00 | .00 | .00 |
| 5 | .00 | .02 | .00 | .12 | 1.3 | 1.8 | 1.4 | 2.2 | 2.0 | .00 | .00 | .00 |
| 6 | .00 | .02 | .00 | .12 | 1.2 | 1.6 | 1.9 | 2.3 | 1.6 | .00 | .00 | .00 |
| 7 | .00 | .02 | .00 | .12 | 1.2 | 1.9 | 1.8 | 2.5 | 1.3 | .00 | .00 | .00 |
| 8 | .00 | .02 | .00 | .10 | 21 | 1.9 | 1.7 | 2.6 | 1.0 | .00 | .00 | .00 |
| 9 | .00 | .10 | .00 | .08 | 25 | 2.2 | 1.5 | 2.6 | .87 | .00 | .00 | .00 |
| 10 | .00 | .16 | .00 | .09 | 4.1 | 2.1 | 1.6 | 2.6 | .67 | .00 | .00 | .00 |
| 11 | .00 | .11 | .01 | .15 | 2.4 | 1.8 | 1.4 | 2.6 | .50 | .00 | .00 | .00 |
| 12 | .00 | .07 | .15 | .24 | 4.5 | 1.7 | 1.2 | 2.8 | .37 | .00 | .00 | .00 |
| 13 | .00 | .06 | .41 | .30 | 2.9 | 1.5 | 2.7 | 3.1 | .23 | .00 | .00 | .00 |
| 14 | .00 | .05 | .13 | .34 | 2.6 | 1.2 | 3.7 | 2.6 | .15 | .00 | .00 | .00 |
| 15 | .00 | .05 | .05 | .48 | 2.3 | 1.0 | 3.2 | 83 | .08 | .00 | .00 | .00 |
| 16 | .00 | .03 | .02 | .62 | 1.3 | 1.3 | 2.9 | 180 | .04 | .00 | .00 | .00 |
| 17 | .00 | .04 | .00 | .60 | 1.2 | 1.5 | 2.8 | 6.0 | .01 | .00 | .00 | .00 |
| 18 | .00 | .03 | .00 | .58 | 1.3 | 1.5 | 2.9 | 3.8 | .00 | .00 | .00 | .00 |
| 19 | .00 | .04 | .00 | .72 | 1.4 | 1.6 | 2.9 | 4.6 | .00 | .00 | .00 | .00 |
| 20 | .00 | .04 | .00 | 1.2 | 1.7 | 1.8 | 2.9 | 3.7 | .04 | .00 | .00 | .00 |
| 21 | .00 | .09 | .01 | 1.3 | 2.0 | 2.0 | 3.3 | 3.7 | .05 | .00 | .00 | .00 |
| 22 | .00 | .08 | .02 | 3.7 | 2.3 | 2.6 | 2.9 | 3.8 | .54 | .00 | .00 | .00 |
| 23 | .00 | .06 | 21 | 3.9 | 2.0 | 2.9 | 2.5 | 3.3 | 2.1 | .00 | .00 | .00 |
| 24 | .01 | .05 | 15 | 2.8 | 1.9 | 2.9 | 3.0 | 4.2 | 1.4 | .00 | .00 | .00 |
| 25 | .00 | .03 | 2.1 | 2.0 | 1.6 | 2.8 | 3.0 | 3.6 | .65 | .00 | .00 | .00 |
| 26 | .00 | .03 | .90 | 1.6 | 1.4 | 2.5 | 3.4 | 3.7 | .40 | .00 | .00 | .00 |
| 27 | .00 | .02 | .37 | 1.4 | 1.4 | 2.3 | 3.1 | 3.2 | .25 | .00 | .00 | .00 |
| 28 | .00 | .01 | .24 | 1.2 | 1.4 | 2.8 | 2.8 | 3.0 | .11 | .00 | .00 | 609 |
| 29 | .00 | .00 | .20 | 1.2 | 1.5 | 2.9 | 2.6 | 3.2 | .04 | .00 | .00 | 2120 |
| 30 | 1.8 | .00 | .17 | 1.4 | --- | 2.8 | 2.3 | 3.1 | .01 | .00 | .00 | 14 |
| 31 | .96 | --- | .16 | 1.4 | --- | 2.2 | --- | 2.8 | --- | .00 | .00 | --- |
| TOTAL | 2.77 | 1.45 | 40.94 | 28.28 | 96.5 | 60.4 | 72.2 | 353.5 | 23.31 | .00 | .00 | 2743.00 |
| MEAN | .089 | .048 | 1.32 | .91 | 3.33 | 1.95 | 2.41 | 11.4 | .78 | .000 | .000 | 91.4 |
| MAX | 1.8 | .16 | 21 | 3.9 | 25 | 2.9 | 3.7 | 180 | 2.5 | .00 | .00 | 2120 |
| MIN | .00 | .00 | .00 | .08 | 1.2 | 1.0 | 1.2 | 2.2 | .00 | .00 | .00 | .00 |
| CFSM | .001 | .001 | .02 | .01 | .05 | .03 | .03 | .16 | .01 | .000 | .000 | 1.27 |
| IN. | .00 | .00 | .02 | .01 | .05 | .03 | .04 | .18 | .01 | .00 | .00 | 1.42 |
| AC-FT | 5.5 | 2.9 | 81 | 56 | 191 | 120 | 143 | 701 | 46 | .00 | .00 | 5440 |

CAL YR 1979 TOTAL 16124.80 MEAN 44.2 MAX 1780 MIN .00 AC-FT 31980
WTR YR 1980 TOTAL 3422.35 MEAN 9.35 MAX 2120 MIN .00 AC-FT 6790

## 07335390 PAT MAYSE LAKE NEAR CHICOTA, TX

LOCATION.--Lat 33°51'10", long 95°32'38", Lamar County, Hydrologic Unit 11140101, on upstream side of dam on Sanders Creek, 2,800 ft (850 m) to right of outlet channel, 2.0 mi (3.2 km) southeast of Chicota, and 4.6 mi (7.4 km) upstream from mouth.

DRAINAGE AREA.--175 mi² (453 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 to current year. Prior to October 1970, published as Pat Mayse Reservoir.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 10, 1968, nonrecording gage at present site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam about 7,080 ft (2,160 m) long, including an emergency spillway 100 ft (30 m) wide located near the right abutment of dam. The dam was completed and deliberate impoundment began Sept. 28, 1967. The flood-control outlet works consist of an uncontrolled morning-glory-type drop-inlet spillway that is connected to a 7.25-foot-diameter (2.21 m) concrete conduit through the dam. A 24- and 12-inch-diameter (610 and 305 mm) low-flow pipe are provided for additional outlets. The lake was built for flood control, municipal, and industrial water supply, recreation, fish and wildlife conservation, and for channel improvement on Sanders Creek. Records furnished by the Corps of Engineers indicate that during the current year, 12,460 acre-ft (15.4 hm³) was diverted from the lake for municipal and industrial uses by the city of Paris. Any resultant effluent is discharged into Pine Creek below Lake Crook, which is located in another drainage basin. The capacity table is based on Geological Survey topographic maps dated 1949. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam.......................................................... | 488.5 | - |
| Crest of spillway.................................................... | 477.0 | 352,700 |
| Top of flood-control pool........................................ | 460.5 | 189,100 |
| Crest of morning-glory drop-inlet spillway (top of conservation pool). | 451.0 | 124,500 |
| Streambed............................................................ | 393.0 | 0 |

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 208,000 acre-ft (256 hm³) Dec. 11, 12, 1971, elevation, 462.87 ft (141.083 m); minimum since conservation pool was first reached on Apr. 20, 1968, 100,900 acre-ft (124 hm³) Nov. 10, 1978, elevation, 446.80 ft (136.185 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 129,700 acre-ft (160 hm³) Feb. 13, elevation, 451.86 ft (137.727 m); minimum, 110,900 acre-ft (137 hm³) Sept. 26, elevation, 448.66 ft (136.752 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | |
|---|---|
| 448.0 | 107,300 |
| 450.0 | 118,600 |
| 452.0 | 130,600 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 119500 | 117800 | 116400 | 122300 | 124000 | 126800 | 124900 | 123800 | 127000 | 125800 | 120100 | 115000 |
| 2 | 119300 | 117700 | 116100 | 122200 | 124000 | 126800 | 124900 | 123700 | 126900 | 125600 | 119800 | 114600 |
| 3 | 119100 | 117600 | 116100 | 122200 | 124000 | 126700 | 124700 | 123500 | 126500 | 125300 | 119700 | 114600 |
| 4 | 118900 | 117400 | 116100 | 122100 | 123800 | 126600 | 124500 | 123500 | 126500 | 125100 | 119500 | 114400 |
| 5 | 118800 | 117300 | 116000 | 122000 | 123900 | 126400 | 124500 | 123400 | 126400 | 124900 | 119300 | 114200 |
| 6 | 118600 | 117200 | 116000 | 121900 | 123900 | 126300 | 124600 | 123400 | 126100 | 124700 | 119000 | 114100 |
| 7 | 118600 | 117000 | 116000 | 121800 | 123900 | 126400 | 124600 | 123300 | 125900 | 124600 | 119000 | 114000 |
| 8 | 118400 | 117700 | 115800 | 121700 | 125800 | 126200 | 124400 | 123100 | 126100 | 124300 | 118800 | 113700 |
| 9 | 118100 | 117900 | 115700 | 121700 | 127700 | 126100 | 124200 | 123000 | 126100 | 124100 | 118700 | 113700 |
| 10 | 118000 | 117800 | 115700 | 121800 | 129100 | 126100 | 124100 | 129100 | 126100 | 123900 | 118500 | 113400 |
| 11 | 117900 | 117700 | 115700 | 121600 | 129400 | 125900 | 124000 | 122900 | 125900 | 123700 | 118400 | 113300 |
| 12 | 117800 | 117600 | 116800 | 121500 | 129600 | 125900 | 123800 | 123000 | 125800 | 123500 | 118300 | 113100 |
| 13 | 117600 | 117600 | 116800 | 121500 | 129700 | 125900 | 124400 | 122900 | 125700 | 123400 | 118100 | 113000 |
| 14 | 117400 | 117400 | 116700 | 121500 | 129700 | 125800 | 124500 | 122700 | 125500 | 123200 | 117900 | 112700 |
| 15 | 117400 | 117400 | 116700 | 121600 | 129500 | 125700 | 119700 | 124500 | 125300 | 122900 | 117600 | 112700 |
| 16 | 117400 | 117400 | 116500 | 121600 | 129400 | 125800 | 124500 | 125100 | 125200 | 122800 | 117600 | 112200 |
| 17 | 117800 | 117300 | 116500 | 121600 | 129200 | 125500 | 124300 | 125400 | 125000 | 122600 | 117400 | 112100 |
| 18 | 117800 | 117000 | 116500 | 121500 | 129000 | 125500 | 124300 | 125500 | 124900 | 122300 | 117200 | 112000 |
| 19 | 117800 | 117200 | 116400 | 121700 | 128900 | 125300 | 124300 | 125500 | 124500 | 122200 | 117100 | 111900 |
| 20 | 117700 | 117300 | 116400 | 122100 | 128800 | 125200 | 124200 | 125400 | 127000 | 122000 | 116800 | 111900 |
| 21 | 117500 | 117500 | 116500 | 122800 | 128600 | 125200 | 124200 | 125900 | 127100 | 121800 | 116700 | 111600 |
| 22 | 117700 | 117300 | 116900 | 123600 | 128500 | 125100 | 124100 | 126700 | 127300 | 121700 | 116500 | 111400 |
| 23 | 117500 | 117200 | 119900 | 124100 | 128300 | 125200 | 124100 | 127000 | 127300 | 121500 | 116300 | 111400 |
| 24 | 117400 | 117100 | 121200 | 124400 | 128000 | 125000 | 123900 | 127000 | 127300 | 121400 | 115900 | 111200 |
| 25 | 117400 | 117000 | 122200 | 124400 | 127700 | 125000 | 124200 | 126800 | 127000 | 121200 | 115900 | 111200 |
| 26 | 117200 | 116900 | 122400 | 124400 | 127700 | 124900 | 124100 | 126800 | 126900 | 121100 | 115800 | 110900 |
| 27 | 117200 | 116800 | 122400 | 124300 | 127600 | 125000 | 124000 | 126700 | 126700 | 120900 | 115500 | 112900 |
| 28 | 117100 | 116700 | 122300 | 124300 | 127500 | 125000 | 124000 | 126400 | 126500 | 120900 | 115400 | 116200 |
| 29 | 116800 | 116500 | 122300 | 124100 | 127200 | 125000 | 123900 | 126400 | 126200 | 120700 | 115400 | 119000 |
| 30 | 118000 | 116500 | 122300 | 124100 | --- | 124900 | 123800 | 127300 | 126100 | 120500 | 115300 | 122600 |
| 31 | 117800 | --- | 122300 | 124100 | --- | 124700 | --- | 127200 | --- | 120300 | 115100 | --- |
| MAX | 119500 | 117900 | 122400 | 124400 | 129700 | 126800 | 124900 | 129100 | 127300 | 125800 | 120100 | 122600 |
| MIN | 116800 | 116500 | 115700 | 121500 | 123800 | 124700 | 119700 | 122700 | 124500 | 120300 | 115100 | 110900 |
| (†) | 449.87 | 449.64 | 450.64 | 450.93 | 451.45 | 451.03 | 450.88 | 451.44 | 451.26 | 450.29 | 449.40 | 450.69 |
| (‡) | -1700 | -1300 | +5800 | +1800 | +3100 | -2500 | -900 | +3400 | -1100 | -5800 | -5200 | +7500 |
| (††) | 1190 | 996 | 899 | 1000 | 844 | 839 | 908 | 991 | 908 | 1350 | 1300 | 1230 |

CAL YR 1979 MAX 148600 MIN 112200 ‡ +11700 †† 11560
WTR YR 1980 MAX 129700 MIN 110900 ‡ +3100 †† 12460

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal and industrial use by city of Paris.

## 07335390 PAT MAYSE LAKE NEAR CHICOTA, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

#### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| AUG | | | | | | | | | |
| 19... | 1500 | 195 | 30.0 | 65 | 3 | 22 | 2.5 | 11 | .6 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| AUG | | | | | | | | |
| 19... | 3.8 | 76 | 0 | 14 | 11 | .2 | 1.4 | 103 |

## 07335400 SANDERS CREEK NEAR CHICOTA, TX
(Outflow from Pat Mayse Lake)

**LOCATION.**--Lat 33°51'10", long 95°32'28", Lamar County, Hydrologic Unit 11140101, on upstream side of Pat Mayse Dam, 2,800 ft (853 m) to right of morning-glory drop inlet, 2.0 mi (3.2 km) southeast of Chicota, and 4.6 mi (7.4 km) upstream from mouth.

**DRAINAGE AREA.**--175 mi² (453 km²), at Pat Mayse Dam; 184 mi² (477 km²) at former site 2.6 mi (4.2 km) downstream.

**PERIOD OF RECORD.**--March 1964 to September 1967 (gage heights and discharge measurements only), October 1967 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 440.00 ft (134.112 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1967, at site 2.6 mi (4.2 km) downstream at datum 52.77 ft (16.084 m) lower. Oct. 1, 1967, to Sept. 30, 1970, at datum 10.00 ft (3.048 m) higher.

**REMARKS.**--Records fair. Flow represents uncontrolled outflow from Pat Mayse Lake (station 07335390). Flow downstream from dam is affected by local runoff and backwater from the Red River.

**AVERAGE DISCHARGE.**--13 years, 121 ft³/s (3.427 m³/s), 87,660 acre-ft/yr (108 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum outflow, 1,060 ft³/s (30.0 m³/s) May 19, 1969, gage height, 10.20 ft (3.109 m), datum then in use; maximum gage height, 22.87 ft (6.971 m) Dec. 11, 12, 1971; no flow at times each year.

**EXTREMES FOR CURRENT YEAR.**--Maximum outflow, 112 ft³/s (3.17 m³/s) Feb. 13 at 1500 hours, gage height, 11.86 ft (3.615 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .00 | .00 | .00 | 6.6 | 43 | 8.5 | .00 | 41 | 23 | .00 | .00 |
| 2 | .00 | .00 | .00 | .00 | 6.6 | 41 | 8.3 | .00 | 39 | 20 | .00 | .00 |
| 3 | .00 | .00 | .00 | .00 | 6.6 | 40 | 8.5 | .00 | 36 | 16 | .00 | .00 |
| 4 | .00 | .00 | .00 | .00 | 5.0 | 36 | 6.5 | .00 | 32 | 13 | .00 | .00 |
| 5 | .00 | .00 | .00 | .00 | 4.9 | 32 | 5.3 | .00 | 31 | 11 | .00 | .00 |
| 6 | .00 | .00 | .00 | .00 | 4.6 | 30 | 5.5 | .00 | 27 | 8.8 | .00 | .00 |
| 7 | .00 | .00 | .00 | .00 | 2.7 | 32 | 5.8 | .00 | 23 | 7.0 | .00 | .00 |
| 8 | .00 | .00 | .00 | .00 | 13 | 30 | 4.4 | .00 | 24 | 5.1 | .00 | .00 |
| 9 | .00 | .00 | .00 | .00 | 45 | 25 | 2.7 | .00 | 25 | 2.5 | .00 | .00 |
| 10 | .00 | .00 | .00 | .00 | 84 | 24 | 1.5 | .00 | 25 | 1.2 | .00 | .00 |
| 11 | .00 | .00 | .00 | .00 | 99 | 20 | .49 | .00 | 24 | .06 | .00 | .00 |
| 12 | .00 | .00 | .00 | .00 | 103 | 22 | .00 | .00 | 21 | .00 | .00 | .00 |
| 13 | .00 | .00 | .00 | .00 | 109 | 22 | 1.6 | .00 | 19 | .00 | .00 | .00 |
| 14 | .00 | .00 | .00 | .00 | 112 | 20 | 4.4 | .00 | 17 | .00 | .00 | .00 |
| 15 | .00 | .00 | .00 | .00 | 110 | 20 | 4.6 | .00 | 15 | .00 | .00 | .00 |
| 16 | .00 | .00 | .00 | .00 | 101 | 20 | 4.3 | 8.4 | 13 | .00 | .00 | .00 |
| 17 | .00 | .00 | .00 | .00 | 96 | 17 | 2.9 | 13 | 11 | .00 | .00 | .00 |
| 18 | .00 | .00 | .00 | .00 | 92 | 16 | 2.8 | 15 | 10 | .00 | .00 | .00 |
| 19 | .00 | .00 | .00 | .00 | 89 | 14 | 2.8 | 16 | 7.5 | .00 | .00 | .00 |
| 20 | .00 | .00 | .00 | .00 | 84 | 14 | 2.2 | 15 | 31 | .00 | .00 | .00 |
| 21 | .00 | .00 | .00 | .00 | 79 | 13 | 1.8 | 16 | 43 | .00 | .00 | .00 |
| 22 | .00 | .00 | .00 | 4.0 | 77 | 12 | 1.3 | 28 | 45 | .00 | .00 | .00 |
| 23 | .00 | .00 | .00 | 4.3 | 73 | 12 | .85 | 37 | 46 | .00 | .00 | .00 |
| 24 | .00 | .00 | .00 | 9.0 | 66 | 11 | .30 | 40 | 46 | .00 | .00 | .00 |
| 25 | .00 | .00 | .00 | 9.5 | 61 | 11 | .31 | 38 | 44 | .00 | .00 | .00 |
| 26 | .00 | .00 | .00 | 8.9 | 58 | 9.6 | 1.1 | 36 | 41 | .00 | .00 | .00 |
| 27 | .00 | .00 | .00 | 7.7 | 56 | 9.0 | .31 | 35 | 37 | .00 | .00 | .00 |
| 28 | .00 | .00 | .00 | 7.1 | 55 | 11 | .01 | 31 | 35 | .00 | .00 | .00 |
| 29 | .00 | .00 | .00 | 7.1 | 48 | 10 | .00 | 31 | 30 | .00 | .00 | .00 |
| 30 | .00 | .00 | .00 | 8.1 | --- | 9.1 | .00 | 41 | 27 | .00 | .00 | --- |
| 31 | .00 | --- | .00 | 7.6 | --- | 8.9 | --- | 44 | --- | .00 | .00 | --- |
| TOTAL | .00 | .00 | .00 | 73.30 | 1747.0 | 634.6 | 89.07 | 444.40 | 865.5 | 107.66 | .00 | .00 |
| MEAN | .000 | .000 | .000 | 2.36 | 60.2 | 20.5 | 2.97 | 14.3 | 28.9 | 3.47 | .000 | .000 |
| MAX | .00 | .00 | .00 | 9.5 | 112 | 43 | 8.5 | 44 | 46 | 23 | .00 | .00 |
| MIN | .00 | .00 | .00 | .00 | 2.7 | 8.9 | .00 | .00 | 7.5 | .00 | .00 | .00 |
| AC-FT | .00 | .00 | .00 | 145 | 3470 | 1260 | 177 | 881 | 1720 | 214 | .00 | .00 |

CAL YR 1979 TOTAL 40859.94 MEAN 112 MAX 857 MIN .00 AC-FT 81050
WTR YR 1980 TOTAL 3961.53 MEAN 10.8 MAX 112 MIN .00 AC-FT 7860

## 07335500 RED RIVER AT ARTHUR CITY, TX

LOCATION.--Lat 33°52'32", long 95°30'08", in NW1/4 sec.11, T.8 S., R.17 E., Choctaw County, Okla., Hydrologic Unit 11140101, near right bank on downstream side of pier of bridge on U.S. Highway 271 at Arthur City, 10.6 mi (17.1 km) downstream from Muddy Boggy River, 26.0 mi (41.8 km) upstream from Kiamichi River, and at mile 633.1 (1,018.7 km).

DRAINAGE AREA.--44,531 $mi^2$ (115,335 $km^2$), of which 5,936 $mi^2$ (15,374 $km^2$) probably is noncontributing.

PERIOD OF RECORD.--January to September 1905 (gage heights and discharge measurements only), October 1905 to December 1911, July 1936 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected at same site since 1891 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1241: Drainage area. WSP 1311: 1906-11.

GAGE.--Water-stage recorder. Datum of gage is 380.07 ft (115.845 m) National Geodetic Vertical Datum of 1929. From 1905-11, nonrecording gage at St. Louis-San Francisco Railway Co. bridge 200 ft (61 m) upstream at same datum. July 1, 1936, to Mar. 24, 1940, nonrecording gage at present site and datum.

REMARKS.--Records fair. Flow regulated since October 1943 by Lake Texoma (station 07331500), 92.8 mi (149.3 km) above station.

COOPERATION.--Gage-height records and 20 discharge measurements furnished by Corps of Engineers; records computed by the Geological Survey.

AVERAGE DISCHARGE.--13 years (water years 1906-11, 1937-43) prior to completion of Denison Dam, 9,266 $ft^3/s$ (262.4 $m^3/s$), 6,713,000 acre-ft/yr (8.28 $km^3/yr$); 36 years (water years 1944-80) regulated, 7,671 $ft^3/s$ (217.2 $m^3/s$), 5,558,000 acre-ft/yr (6.85 $km^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 400,000 $ft^3/s$ (11,300 $m^3/s$) May 28, 1908, gage height, 43.2 ft (13.17 m), from rating curve extended above 41,000 $ft^3/s$ (1,160 $m^3/s$) on basis of records for later years; minimum, 130 $ft^3/s$ (3.68 $m^3/s$) Dec. 11, 12, 1956, gage height, 4.49 ft (1.369 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 39,200 $ft^3/s$ (1,110 $m^3/s$) June 5, gage height, 16.85 ft (5.136 m); minimum daily, 364 $ft^3/s$ (10.3 $m^3/s$) Nov. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3040 | 2600 | 501 | 733 | 2910 | 2600 | 1370 | 930 | 15000 | 1260 | 4320 | 2740 |
| 2 | 2730 | 2150 | 1040 | 512 | 1730 | 3110 | 1210 | 1970 | 12800 | 2590 | 4040 | 1020 |
| 3 | 4330 | 1100 | 1610 | 456 | 3000 | 4300 | 1640 | 2680 | 10800 | 3490 | 3170 | 708 |
| 4 | 3510 | 1230 | 774 | 424 | 2250 | 4210 | 1500 | 5830 | 26900 | 3940 | 2040 | 596 |
| 5 | 3300 | 1200 | 862 | 506 | 1100 | 4220 | 2370 | 5650 | 37500 | 3300 | 1560 | 528 |
| 6 | 3210 | 1180 | 1230 | 894 | 770 | 2190 | 1960 | 2780 | 31500 | 2340 | 1350 | 1270 |
| 7 | 2660 | 1190 | 851 | 843 | 1200 | 1030 | 961 | 1130 | 21600 | 1970 | 1850 | 2800 |
| 8 | 2200 | 1010 | 1250 | 648 | 1610 | 878 | 643 | 879 | 21500 | 1940 | 2680 | 2500 |
| 9 | 1730 | 2240 | 903 | 445 | 1550 | 941 | 774 | 1350 | 19700 | 1700 | 2670 | 2400 |
| 10 | 2710 | 3130 | 689 | 602 | 1600 | 1470 | 2100 | 1380 | 17600 | 3020 | 3200 | 2390 |
| 11 | 2780 | 1850 | 435 | 2060 | 1800 | 798 | 924 | 956 | 16300 | 5200 | 3720 | 2550 |
| 12 | 2140 | 1320 | 461 | 1620 | 1600 | 607 | 530 | 560 | 16200 | 5200 | 2910 | 2760 |
| 13 | 2950 | 789 | 566 | 1220 | 1800 | 527 | 497 | 453 | 12700 | 4770 | 2590 | 3390 |
| 14 | 3180 | 1070 | 478 | 1090 | 1750 | 484 | 546 | 410 | 10200 | 4160 | 3860 | 3970 |
| 15 | 2220 | 1990 | 750 | 1290 | 1600 | 460 | 1760 | 829 | 6610 | 3370 | 3760 | 3080 |
| 16 | 1290 | 1310 | 1700 | 720 | 1430 | 589 | 2700 | 2730 | 5780 | 3210 | 4570 | 1930 |
| 17 | 1040 | 1950 | 835 | 506 | 1100 | 747 | 2240 | 2960 | 5600 | 3550 | 3270 | 1360 |
| 18 | 829 | 2350 | 567 | 445 | 2000 | 664 | 1490 | 2980 | 6400 | 3540 | 2580 | 2650 |
| 19 | 1420 | 2310 | 1180 | 480 | 6500 | 584 | 1320 | 2280 | 6510 | 2960 | 2130 | 2070 |
| 20 | 2310 | 990 | 1690 | 679 | 4260 | 1390 | 2170 | 2290 | 9200 | 3130 | 1270 | 1590 |
| 21 | 4770 | 684 | 1360 | 1990 | 3360 | 1640 | 2200 | 2610 | 9460 | 2540 | 3120 | 1740 |
| 22 | 3280 | 939 | 1300 | 2580 | 3810 | 808 | 1570 | 1870 | 9100 | 1060 | 3780 | 1020 |
| 23 | 2050 | 936 | 1810 | 2610 | 3040 | 585 | 999 | 2420 | 8040 | 943 | 3860 | 880 |
| 24 | 1610 | 649 | 3040 | 3500 | 3880 | 780 | 1180 | 2690 | 5860 | 1940 | 3320 | 872 |
| 25 | 1270 | 445 | 2000 | 4000 | 3150 | 603 | 821 | 2450 | 5950 | 1570 | 1840 | 1160 |
| 26 | 1010 | 395 | 1400 | 4500 | 2440 | 554 | 798 | 2850 | 4460 | 1460 | 1280 | 1550 |
| 27 | 1320 | 364 | 1420 | 2560 | 4330 | 1720 | 1130 | 3590 | 4490 | 1260 | 1150 | 1010 |
| 28 | 1290 | 615 | 1210 | 1630 | 5420 | 1600 | 2690 | 3320 | 4610 | 2060 | 1860 | 3790 |
| 29 | 920 | 1510 | 1320 | 2910 | 4120 | 2160 | 1800 | 3000 | 3910 | 1220 | 2410 | 13600 |
| 30 | 712 | 810 | 1750 | 4500 | --- | 2710 | 885 | 8620 | 2430 | 3020 | 3060 | 20700 |
| 31 | 1090 | --- | 1440 | 6000 | --- | 1510 | --- | 13500 | --- | 3750 | 3910 | --- |
| TOTAL | 68901 | 40306 | 36422 | 52953 | 75110 | 46469 | 42778 | 87947 | 368710 | 85463 | 87130 | 88624 |
| MEAN | 2223 | 1344 | 1175 | 1708 | 2590 | 1499 | 1426 | 2837 | 12290 | 2757 | 2811 | 2954 |
| MAX | 4770 | 3130 | 3040 | 6000 | 6500 | 4300 | 2700 | 13500 | 37500 | 5200 | 4570 | 20700 |
| MIN | 712 | 364 | 435 | 424 | 770 | 460 | 497 | 410 | 2430 | 943 | 1150 | 528 |
| AC-FT | 136700 | 79950 | 72240 | 105000 | 149000 | 92170 | 84850 | 174400 | 731300 | 169500 | 172800 | 175800 |

CAL YR 1979 TOTAL 2230289 MEAN 6110 MAX 52900 MIN 364 AC-FT 4424000
WTR YR 1980 TOTAL 1080813 MEAN 2953 MAX 37500 MIN 364 AC-FT 2144000

## 07336750 LITTLE PINE CREEK NEAR KANAWHA, TX

**LOCATION.**--Lat 33°50'26", long 95°15'55", Red River County, Hydrologic Unit 11140106, on right bank at downstream side of bridge on Farm Road 410, 1.6 mi (2.6 km) south of Kanawha, 1.8 mi (2.9 km) upstream from Tanyard Creek, and about 4 mi (6 km) upstream from Big Pine Creek.

**DRAINAGE AREA.**---75.4 mi² (195.3 km²).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--December 1968 to September 1980 (discontinued).

**GAGE.**--Water-stage recorder. Datum of gage is 389.26 ft (118.646 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Water-discharge records good. No known diversion or return water in vicinity of gage.

**COOPERATION.**--Records furnished by Corps of Engineers and reviewed by the Geological Survey.

**AVERAGE DISCHARGE.**--11 years (water years 1970-80), 71.6 ft³/s (2.028 m³/s), 12.90 in/yr (328 mm/yr), 51,870 acre-ft/yr (64.0 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 30,200 ft³/s (855 m³/s) Dec. 10, 1971, gage height, 21.26 ft (6.480 m), from rating curve extended above 4,400 ft³/s (125 m³/s) on basis of contracted-opening and flow-over-road measurement of peak flow; no flow at times each year.

Maximum stage since 1948, that of Dec. 10, 1971.

**EXTREMES FOR CURRENT YEAR.**--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| Dec. 24 | 1600 | 1,240 | 35.1 | 14.54 | 4.432 |
| Feb. 9 | 2030 | 1,110 | 31.4 | 14.38 | 4.383 |
| June 21 | 1315 | *2,700 | 76.5 | 15.46 | 4.712 |

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .01 | .01 | 1.0 | 29 | 2.9 | 20 | 2.1 | 37 | .22 | .00 | .00 |
| 2 | .00 | .00 | .00 | .85 | 14 | 2.2 | 12 | .90 | 7.4 | .15 | .00 | .00 |
| 3 | .00 | .00 | .00 | .77 | 8.3 | 2.1 | 8.3 | 1.3 | 1.6 | .15 | .00 | .00 |
| 4 | .00 | .00 | .00 | .66 | 6.9 | 2.1 | 6.0 | .73 | .36 | .12 | .00 | .00 |
| 5 | .00 | .00 | .00 | .50 | 4.4 | 2.9 | 4.1 | .34 | .11 | .10 | .00 | .00 |
| 6 | .00 | .00 | .00 | .42 | 2.9 | 2.9 | 3.5 | .13 | .05 | .11 | .00 | .00 |
| 7 | .00 | .00 | .00 | .32 | 2.2 | 2.8 | 2.8 | .08 | .02 | .11 | .00 | .00 |
| 8 | .00 | .00 | .00 | .26 | 97 | 2.7 | 2.0 | .05 | 5.4 | .11 | .00 | .00 |
| 9 | .00 | 223 | .00 | .24 | 725 | 1.5 | .92 | .04 | 54 | .10 | .00 | .00 |
| 10 | .00 | 152 | .00 | .32 | 727 | 2.4 | .46 | .03 | 62 | .08 | .00 | .00 |
| 11 | .00 | 25 | .00 | .66 | 248 | 3.6 | .45 | .02 | 8.5 | .05 | .00 | .00 |
| 12 | .00 | 4.5 | 3.3 | .50 | 178 | 10 | .36 | .02 | 1.1 | .05 | .00 | .00 |
| 13 | .00 | 1.3 | 48 | .44 | 129 | 9.2 | 36 | .02 | .22 | .03 | .00 | .00 |
| 14 | .00 | .48 | 43 | .44 | 78 | 6.8 | 344 | .02 | .07 | .03 | .00 | .00 |
| 15 | .00 | .29 | 9.5 | .44 | 57 | 6.6 | 472 | 2.1 | .03 | .02 | .00 | .00 |
| 16 | .00 | .15 | 1.9 | .53 | 44 | 6.3 | 94 | 236 | .01 | .02 | .00 | .00 |
| 17 | .00 | .11 | 1.3 | .59 | 32 | 5.3 | 43 | 355 | .00 | .01 | .00 | .00 |
| 18 | .00 | .08 | 1.2 | .59 | 24 | 3.7 | 35 | 56 | .00 | .01 | .00 | .00 |
| 19 | .00 | .06 | 1.2 | .73 | 19 | 3.0 | 26 | 14 | .00 | .01 | .00 | .00 |
| 20 | .00 | .06 | 1.1 | 5.5 | 16 | 3.0 | 17 | 3.8 | 162 | .01 | .00 | .00 |
| 21 | .00 | 11 | .75 | 168 | 12 | 2.6 | 11 | 3.2 | 1690 | .01 | .00 | .00 |
| 22 | .00 | 4.7 | 22 | 735 | 9.4 | 2.1 | 7.0 | 104 | 614 | .00 | .00 | .00 |
| 23 | .00 | .35 | 308 | 686 | 6.8 | 1.9 | 4.4 | 167 | 60 | .00 | .00 | .00 |
| 24 | .00 | .12 | 941 | 248 | 4.9 | 3.2 | 3.1 | 45 | 37 | .00 | .00 | .00 |
| 25 | .00 | .08 | 575 | 61 | 4.0 | 2.6 | 3.3 | 13 | 17 | .00 | .00 | .00 |
| 26 | .00 | .07 | 71 | 28 | 4.0 | 2.0 | 47 | 3.4 | 6.1 | .00 | .00 | .00 |
| 27 | .00 | .07 | 20 | 12 | 4.0 | 2.2 | 55 | .98 | 2.1 | .00 | .00 | .00 |
| 28 | .00 | .04 | 8.0 | 6.6 | 4.0 | 7.3 | 25 | .30 | .84 | .00 | .00 | 27 |
| 29 | .00 | .03 | 3.4 | 9.0 | 3.4 | 13 | 9.2 | .15 | .46 | .00 | .00 | 197 |
| 30 | .00 | .01 | 2.8 | 21 | --- | 66 | 4.3 | 67 | .34 | .00 | .00 | 296 |
| 31 | .00 | --- | 1.8 | 36 | --- | 40 | --- | 166 | --- | .00 | .00 | --- |
| TOTAL | .00 | 423.51 | 2064.26 | 2026.36 | 2494.2 | 224.9 | 1297.19 | 1242.71 | 2767.71 | 1.50 | .00 | 520.00 |
| MEAN | .000 | 14.1 | 66.6 | 65.4 | 86.0 | 7.25 | 43.2 | 40.1 | 92.3 | .048 | .000 | 17.3 |
| MAX | .00 | 223 | 941 | 735 | 727 | 66 | 472 | 355 | 1690 | .22 | .00 | 296 |
| MIN | .00 | .00 | .00 | .24 | 2.2 | 1.5 | .36 | .02 | .00 | .00 | .00 | .00 |
| CFSM | .000 | .19 | .88 | .87 | 1.14 | .10 | .57 | .53 | 1.22 | .001 | .000 | .23 |
| IN. | .00 | .21 | 1.02 | 1.00 | 1.23 | .11 | .64 | .61 | 1.37 | .00 | .00 | .26 |
| AC-FT | .00 | 840 | 4090 | 4020 | 4950 | 446 | 2570 | 2460 | 5490 | 3.0 | .00 | 1030 |

CAL YR 1979 TOTAL 39288.16 MEAN 108 MAX 3400 MIN .00 CFSM 1.43 IN 19.38 AC-FT 77930
WTR YR 1980 TOTAL 13062.34 MEAN 35.7 MAX 1690 MIN .00 CFSM .47 IN 6.44 AC-FT 25910

## 07336750 LITTLE PINE CREEK NEAR KANAWHA, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1977. Periodic sediment analyses: October 1979 to September 1980 (discontinued).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: November 1979 to September 1980 (discontinued).

INSTRUMENTATION.--Water temperature is recorded continuously at this station.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | TEMPER-ATURE, WATER (DEG C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|
| NOV | | | | | | |
| 14... | 1025 | .52 | 7.0 | 26 | .04 | -- |
| DEC | | | | | | |
| 18... | 1015 | 1.2 | 1.5 | 58 | .19 | -- |
| JAN | | | | | | |
| 29... | 1035 | 8.3 | 5.5 | 16 | .36 | 86 |
| MAR | | | | | | |
| 11... | 1015 | 3.4 | 12.5 | 9 | .08 | 98 |
| APR | | | | | | |
| 15... | 1130 | 538 | 11.5 | 46 | 67 | 94 |
| MAY | | | | | | |
| 20... | 1015 | 4.1 | 20.5 | 51 | .57 | 79 |
| JUL | | | | | | |
| 08... | 1015 | .11 | 24.5 | 27 | .01 | 98 |

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | |
| 1 | | | | --- | --- | 12.5 | 6.5 | 2.0 | 4.0 | 7.0 | 6.0 | 6.5 |
| 2 | | | | --- | --- | --- | --- | --- | --- | 7.0 | 6.0 | 6.5 |
| 3 | | | | --- | --- | --- | --- | --- | --- | 7.0 | 6.5 | 7.0 |
| 4 | | | | --- | --- | --- | --- | --- | --- | 6.5 | 6.0 | 6.0 |
| 5 | | | | --- | --- | --- | --- | --- | --- | 7.0 | 6.5 | 6.5 |
| 6 | | | | --- | --- | --- | --- | --- | --- | 7.0 | 5.5 | 6.0 |
| 7 | | | | --- | --- | --- | --- | --- | --- | 7.0 | 6.0 | 6.5 |
| 8 | | | | --- | --- | --- | --- | --- | --- | 6.0 | 5.5 | 5.5 |
| 9 | | | | 14.0 | 12.0 | 13.5 | --- | --- | --- | 5.5 | 5.5 | 5.5 |
| 10 | | | | 13.5 | 13.0 | 11.5 | --- | --- | --- | 6.5 | 5.5 | 6.0 |
| 11 | | | | 11.5 | 10.0 | 10.5 | --- | --- | --- | 8.5 | 7.0 | 8.0 |
| 12 | | | | 10.0 | 9.0 | 9.0 | 10.5 | 7.0 | 8.0 | 8.0 | 6.5 | 7.0 |
| 13 | | | | 9.0 | 7.0 | 8.0 | 7.0 | 6.5 | 6.5 | 6.5 | 6.0 | 6.0 |
| 14 | | | | 9.0 | 6.5 | 8.0 | 8.0 | 6.5 | 7.0 | 7.0 | 6.0 | 6.5 |
| 15 | | | | 10.0 | 6.5 | 8.0 | 7.0 | 6.0 | 6.5 | 9.0 | 7.0 | 8.5 |
| 16 | | | | 11.0 | 6.5 | 8.5 | 8.0 | 5.0 | 5.5 | 10.5 | 9.0 | 10.0 |
| 17 | | | | 12.0 | 8.0 | 9.5 | 5.0 | 3.0 | 4.0 | 10.5 | 9.0 | 10.0 |
| 18 | | | | 13.5 | 10.0 | 11.5 | 3.0 | 1.5 | 2.0 | 9.5 | 8.5 | 9.0 |
| 19 | | | | 16.5 | 12.0 | 14.5 | 4.5 | 3.0 | 3.5 | 9.5 | 9.0 | 9.0 |
| 20 | | | | 18.5 | 15.0 | 16.5 | 7.0 | 4.5 | 5.5 | 9.5 | 9.5 | 9.5 |
| 21 | | | | 18.0 | 15.5 | 16.5 | 10.0 | 7.0 | 9.0 | 9.5 | 9.0 | 9.0 |
| 22 | | | | 15.5 | 10.0 | 12.0 | 12.0 | 10.0 | 11.0 | 9.0 | 8.5 | 8.5 |
| 23 | | | | 10.0 | 8.0 | 9.0 | 13.0 | 11.0 | 11.5 | 8.5 | 7.0 | 8.0 |
| 24 | | | | 9.0 | 7.0 | 8.0 | 11.0 | 10.5 | 10.5 | 7.0 | 6.5 | 6.5 |
| 25 | | | | 10.5 | 6.5 | 9.0 | 10.5 | 9.0 | 9.0 | 8.0 | 7.0 | 7.0 |
| 26 | | | | 11.0 | 6.5 | 9.0 | 9.0 | 8.0 | 8.5 | 8.5 | 8.0 | 8.0 |
| 27 | | | | 14.0 | 8.5 | 10.5 | 9.5 | 9.0 | 9.0 | 8.5 | 6.5 | 7.0 |
| 28 | | | | 10.0 | 6.5 | 8.0 | 9.5 | 9.5 | 9.5 | 6.5 | 6.0 | 6.5 |
| 29 | | | | 6.5 | 4.5 | 5.5 | 9.5 | 9.0 | 9.0 | 6.0 | 5.5 | 5.5 |
| 30 | | | | 6.0 | 3.5 | 4.0 | 9.0 | 8.5 | 8.5 | 5.5 | 5.5 | 5.5 |
| 31 | | | | --- | --- | --- | 8.5 | 6.5 | 7.0 | 5.5 | 4.5 | 5.0 |
| MONTH | | | | 18.5 | 3.5 | 10.0 | 13.0 | 1.5 | 7.5 | 10.5 | 4.5 | 7.0 |

## 07336750 LITTLE PINE CREEK NEAR KANAWHA, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 4.5 | 4.5 | 4.5 | 10.5 | 8.5 | 9.5 | | | 13.5 | --- | --- | 18.5 |
| 2 | 4.5 | 4.5 | 4.5 | 8.5 | 7.0 | 8.0 | | | 14.5 | --- | --- | 18.5 |
| 3 | 5.0 | 4.5 | 4.5 | 8.0 | 6.5 | 7.0 | | | 16.0 | --- | --- | 19.0 |
| 4 | 5.0 | 5.0 | 5.0 | 10.0 | 8.0 | 9.0 | | | 15.0 | --- | --- | 18.5 |
| 5 | 6.5 | 5.0 | 5.5 | 10.0 | 9.5 | 10.0 | | | 14.5 | --- | --- | 19.0 |
| 6 | 6.5 | 6.0 | 6.5 | 10.0 | 9.0 | 9.5 | | | 15.5 | --- | --- | 19.5 |
| 7 | 6.5 | 6.0 | 6.0 | 13.0 | 10.0 | 11.0 | | | 17.0 | --- | --- | 20.0 |
| 8 | 6.0 | 5.0 | 5.0 | 13.0 | 12.0 | 13.0 | | | 19.0 | --- | --- | 20.5 |
| 9 | 5.0 | 4.0 | 4.5 | 12.0 | 10.5 | 11.5 | | | 17.0 | --- | --- | 20.0 |
| 10 | 4.0 | 3.5 | 3.5 | 13.0 | 11.0 | 11.5 | | | 15.0 | --- | --- | 19.5 |
| 11 | 4.0 | 3.5 | 3.5 | --- | --- | 12.0 | | | 14.0 | --- | --- | 20.5 |
| 12 | 4.5 | 4.0 | 4.0 | --- | --- | 12.0 | | | 13.5 | --- | --- | 22.0 |
| 13 | 5.5 | 4.5 | 5.0 | --- | --- | 11.5 | | | 13.0 | --- | --- | 24.0 |
| 14 | 6.5 | 5.0 | 6.0 | --- | --- | 11.0 | | | 12.0 | --- | --- | 23.0 |
| 15 | 9.0 | 6.5 | 7.0 | --- | --- | 10.0 | | | 11.5 | --- | --- | 21.5 |
| 16 | 9.0 | 7.0 | 8.5 | --- | --- | 11.0 | | | 13.0 | --- | --- | 20.5 |
| 17 | 7.0 | 6.0 | 6.5 | --- | --- | 11.5 | | | 14.5 | 20.0 | 18.5 | 19.5 |
| 18 | 6.5 | 6.0 | 6.5 | --- | --- | 10.5 | | | 15.0 | 21.5 | 20.0 | 21.0 |
| 19 | 8.5 | 6.5 | 7.0 | --- | --- | 10.0 | | | 15.5 | 21.5 | 21.0 | 21.0 |
| 20 | 9.5 | 8.5 | 9.0 | --- | --- | 11.0 | | | 15.5 | 21.0 | 20.5 | 21.0 |
| 21 | 11.0 | 9.5 | 10.0 | --- | --- | 12.0 | | | 16.0 | 20.5 | 20.0 | 20.5 |
| 22 | 12.0 | 11.0 | 11.5 | --- | --- | 12.0 | | | 16.0 | 20.0 | 20.0 | 20.0 |
| 23 | 13.0 | 11.5 | 12.0 | --- | --- | 12.0 | | | 16.0 | 20.5 | 20.0 | 20.0 |
| 24 | 12.0 | 11.5 | 11.5 | --- | --- | 13.0 | | | 16.5 | 21.5 | 20.5 | 20.5 |
| 25 | 11.5 | 10.0 | 10.5 | --- | --- | 11.5 | | | 17.0 | 22.0 | 21.5 | 21.5 |
| 26 | 10.5 | 9.0 | 9.5 | --- | --- | 10.5 | | | 16.5 | 23.5 | 22.0 | 23.0 |
| 27 | 9.5 | 8.5 | 9.0 | --- | --- | 11.5 | | | 16.5 | 23.5 | 22.0 | 23.5 |
| 28 | 11.0 | 9.5 | 10.0 | --- | --- | 12.0 | | | 17.0 | 23.5 | 22.0 | 23.0 |
| 29 | 11.0 | 10.5 | 11.0 | --- | --- | 13.0 | | | 18.0 | 23.5 | 21.5 | 23.0 |
| 30 | --- | --- | --- | --- | --- | 14.0 | | | 18.0 | 23.0 | 21.5 | 22.0 |
| 31 | --- | --- | --- | --- | --- | 12.0 | | | | 23.0 | 22.0 | 22.0 |
| MONTH | 13.0 | 3.5 | 7.0 | 13.0 | 6.5 | 11.0 | | | 15.5 | 23.5 | 18.5 | 21.0 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 23.0 | 23.0 | 23.0 | | | 25.5 | | | | --- | --- | --- |
| 2 | 23.5 | 23.0 | 23.5 | | | 25.0 | | | | --- | --- | --- |
| 3 | 23.5 | 23.5 | 23.5 | | | 25.0 | | | | --- | --- | --- |
| 4 | 24.5 | 23.0 | 24.0 | | | 25.0 | | | | --- | --- | --- |
| 5 | 25.5 | 23.0 | 24.0 | | | 25.0 | | | | --- | --- | --- |
| 6 | 25.0 | 23.0 | 24.0 | | | 24.5 | | | | --- | --- | --- |
| 7 | 25.5 | 23.5 | 24.5 | | | 24.5 | | | | --- | --- | --- |
| 8 | 24.5 | 23.5 | 24.0 | | | 24.5 | | | | --- | --- | --- |
| 9 | 23.5 | 22.0 | 22.0 | | | 24.5 | | | | --- | --- | --- |
| 10 | 22.0 | 21.5 | 22.0 | | | 24.5 | | | | --- | --- | --- |
| 11 | 23.0 | 22.0 | 22.0 | | | 24.5 | | | | --- | --- | --- |
| 12 | 23.5 | 22.0 | 23.0 | | | 24.5 | | | | --- | --- | --- |
| 13 | 25.0 | 21.5 | 23.5 | | | 24.5 | | | | --- | --- | --- |
| 14 | 25.5 | 21.5 | 23.5 | | | 24.5 | | | | --- | --- | --- |
| 15 | 26.0 | 21.5 | 24.0 | | | 24.5 | | | | --- | --- | --- |
| 16 | 25.5 | 23.0 | 24.5 | | | 26.0 | | | | --- | --- | --- |
| 17 | --- | --- | --- | | | 25.5 | | | | --- | --- | --- |
| 18 | --- | --- | --- | | | 25.0 | | | | --- | --- | --- |
| 19 | --- | --- | --- | | | 25.0 | | | | --- | --- | --- |
| 20 | 25.5 | 23.0 | 23.5 | | | 24.5 | | | | --- | --- | --- |
| 21 | 25.0 | 23.0 | 23.5 | | | 24.5 | | | | --- | --- | --- |
| 22 | --- | --- | 23.5 | | | --- | | | | --- | --- | --- |
| 23 | --- | --- | 23.5 | | | --- | | | | --- | --- | --- |
| 24 | --- | --- | 24.0 | | | --- | | | | --- | --- | --- |
| 25 | --- | --- | 25.0 | | | --- | | | | --- | --- | --- |
| 26 | --- | --- | 26.0 | | | --- | | | | --- | --- | --- |
| 27 | --- | --- | 27.0 | | | --- | | | | --- | --- | --- |
| 28 | --- | --- | 28.5 | | | --- | | | | 18.5 | 15.5 | 16.5 |
| 29 | --- | --- | 27.0 | | | --- | | | | 17.0 | 16.5 | 16.5 |
| 30 | --- | --- | 26.5 | | | --- | | | | 19.0 | 17.0 | 18.0 |
| 31 | --- | --- | --- | | | --- | | | | --- | --- | --- |
| MONTH | 26.0 | 21.5 | 24.0 | | | 25.0 | | | | 19.0 | 15.5 | 17.0 |

## 07336820 RED RIVER NEAR DE KALB, TX

**LOCATION.**--Lat 33°41'15", long 94°41'39", Bowie County, Tex.-McCurtain County, Okla. State line, Hydrologic Unit 11140106, near left bank at downstream side of bridge on U.S. Highway 259, 4.8 mi (7.7 km) upstream from North Mill Creek, 13 mi (21 km) north of De Kalb, and at mile 556.9 (896.1 km).

**DRAINAGE AREA.**--47,348 mi² (122,631 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--December 1967 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 302.92 ft (92.330 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Water-discharge records fair. At times, flood peaks may be affected by storage in Lake Texoma (station 07331500) located approximately 169 mi (272 km) upstream, and low flows may be affected by releases for generation of electric power. National Weather Service gage-height telemeter at station.

**AVERAGE DISCHARGE.**--12 years (water years 1969-80), 11,080 ft³/s (313.8 m³/s), 8,027,000 acre-ft/yr (9.90 km³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 189,000 ft³/s (5,350 m³/s) Dec. 11, 1971, gage height, 31.55 ft (9.616 m), from graph based on gage readings; minimum, 213 ft³/s (6.03 m³/s) Nov. 30, 1979, from graph based on gage readings.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum discharge since 1957, 205,000 ft³/s (5,800 m³/s) June 1957, gage height, 32.2 ft (9.81 m), from rating curve extended above 186,500 ft³/s (5,280 m³/s). The greatest flood since 1936 occurred in February 1938, stage unknown.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 38,300 ft³/s (1,080 m³/s) June 6 at 2130 hours, gage height, 19.54 ft (5.956 m); minimum, 213 ft³/s (6.03 m³/s) Nov. 30, gage height, 6.92 ft (2.109 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4420 | 1610 | 1630 | 5370 | 5360 | 5830 | 4190 | 6730 | 19900 | 4610 | 2960 | 3030 |
| 2 | 4600 | 1690 | 1300 | 5040 | 5890 | 4500 | 3410 | 6040 | 23800 | 3300 | 3790 | 3850 |
| 3 | 3260 | 2790 | 431 | 4440 | 4360 | 3680 | 3150 | 6330 | 22000 | 2500 | 4260 | 3100 |
| 4 | 2950 | 2670 | 796 | 2950 | 3750 | 4120 | 3010 | 7100 | 17500 | 3490 | 3960 | 1740 |
| 5 | 4040 | 1560 | 1900 | 2170 | 4290 | 4730 | 3280 | 8450 | 20900 | 3880 | 3320 | 1230 |
| 6 | 3610 | 1300 | 1280 | 1680 | 3660 | 4720 | 4260 | 12100 | 36000 | 4260 | 2160 | 890 |
| 7 | 3360 | 1280 | 796 | 1510 | 2840 | 4450 | 4980 | 12800 | 35900 | 3610 | 1600 | 726 |
| 8 | 3230 | 1370 | 1430 | 1750 | 3100 | 3190 | 4650 | 10100 | 27800 | 2920 | 1490 | 1390 |
| 9 | 2770 | 2640 | 1010 | 1850 | 7150 | 2250 | 3900 | 6510 | 23900 | 2610 | 1830 | 2290 |
| 10 | 2200 | 4170 | 1300 | 1620 | 9960 | 1770 | 3180 | 4230 | 23400 | 2360 | 2650 | 2320 |
| 11 | 1720 | 4330 | 1010 | 1380 | 12700 | 1710 | 1980 | 3320 | 21100 | 2290 | 2840 | 2140 |
| 12 | 2530 | 4520 | 757 | 1410 | 14400 | 2110 | 2670 | 3180 | 18500 | 3690 | 3350 | 2180 |
| 13 | 2750 | 3250 | 1980 | 2560 | 13400 | 1690 | 2370 | 2480 | 17400 | 5320 | 3800 | 2480 |
| 14 | 2210 | 2390 | 2200 | 2560 | 11500 | 1180 | 5000 | 1730 | 16900 | 5050 | 3050 | 2650 |
| 15 | 2920 | 1680 | 1590 | 2160 | 9900 | 856 | 5800 | 1360 | 14500 | 4830 | 2860 | 3320 |
| 16 | 3270 | 1920 | 1270 | 1990 | 8530 | 720 | 6580 | 2960 | 11700 | 4310 | 3850 | 3850 |
| 17 | 2500 | 2620 | 1230 | 2100 | 6070 | 633 | 8450 | 6180 | 8400 | 3690 | 3980 | 3280 |
| 18 | 1540 | 2320 | 1880 | 1600 | 5070 | 1080 | 8000 | 10900 | 6500 | 3560 | 4420 | 2190 |
| 19 | 1010 | 2760 | 1410 | 1180 | 4930 | 1860 | 5730 | 12500 | 6340 | 3800 | 3620 | 1770 |
| 20 | 919 | 3180 | 776 | 1200 | 6870 | 1250 | 3650 | 10400 | 10300 | 3730 | 2840 | 2420 |
| 21 | 1280 | 3200 | 1590 | 2500 | 7620 | 702 | 3220 | 8510 | 14000 | 3240 | 2410 | 2190 |
| 22 | 2360 | 2310 | 3200 | 4900 | 6740 | 1710 | 3530 | 8590 | 15400 | 3350 | 1900 | 1820 |
| 23 | 4280 | 1520 | 4680 | 7210 | 5940 | 2200 | 3450 | 8760 | 13700 | 2960 | 2900 | 1810 |
| 24 | 3770 | 1570 | 11000 | 8600 | 5310 | 1460 | 2940 | 8410 | 11900 | 1400 | 3830 | 1410 |
| 25 | 2590 | 1610 | 10800 | 8800 | 4610 | 941 | 2570 | 8200 | 9250 | 1270 | 3970 | 1200 |
| 26 | 1770 | 1230 | 8180 | 8730 | 5080 | 2160 | 2850 | 8000 | 7540 | 1960 | 3540 | 1030 |
| 27 | 1200 | 684 | 5990 | 8010 | 4500 | 2210 | 2380 | 7740 | 6470 | 2020 | 2320 | 1300 |
| 28 | 941 | 388 | 6010 | 7100 | 4340 | 2250 | 1980 | 7440 | 5450 | 1530 | 1790 | 2300 |
| 29 | 1150 | 254 | 6020 | 5620 | 5390 | 3390 | 3030 | 6530 | 5520 | 1360 | 1650 | 9510 |
| 30 | 1420 | 348 | 5390 | 4660 | --- | 3660 | 6310 | 6330 | 5310 | 2140 | 2010 | 14900 |
| 31 | 1790 | --- | 5200 | 4330 | --- | 4240 | --- | 9210 | --- | 1770 | 2390 | --- |
| TOTAL | 78360 | 63164 | 94036 | 116980 | 193260 | 77252 | 120500 | 223120 | 477280 | 96810 | 91340 | 84316 |
| MEAN | 2528 | 2105 | 3033 | 3774 | 6664 | 2492 | 4017 | 7197 | 15910 | 3123 | 2946 | 2811 |
| MAX | 4600 | 4520 | 11000 | 8800 | 14400 | 5830 | 8450 | 12800 | 36000 | 5320 | 4420 | 14900 |
| MIN | 919 | 254 | 431 | 1180 | 2840 | 633 | 1980 | 1360 | 5310 | 1270 | 1490 | 726 |
| AC-FT | 155400 | 125300 | 186500 | 232000 | 383300 | 153200 | 239000 | 442600 | 946700 | 192000 | 181200 | 167200 |

CAL YR 1979 TOTAL 3909930 MEAN 10710 MAX 76100 MIN 254 AC-FT 7755000
WTR YR 1980 TOTAL 1716418 MEAN 4690 MAX 36000 MIN 254 AC-FT 3405000

## 07336820 RED RIVER NEAR DE KALB, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: October 1970 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1968 to current year.
WATER TEMPERATURES: January 1968 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,140 micromhos July 13, 1980; minimum daily, 132 micromhos Mar. 25, 1968.
WATER TEMPERATURES: Maximum daily, 34.0°C on several days during July and August 1969-70; minimum daily, 0.0°C Jan. 11, 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,140 micromhos July 13; minimum daily, 202 micromhos May 21.
WATER TEMPERATURES: Maximum daily, 32.0°C July 31; minimum daily 2.0°C Feb. 2, 12.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | COLOR (PLATINUM COBALT UNITS) | TURBIDITY (NTU) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| NOV | | | | | | | | | | |
| 13... | 1610 | 2940 | 1230 | 7.8 | 11.0 | 35 | 40 | 11.2 | 101 | 2.0 |
| 14... | 1440 | 2340 | -- | -- | 11.5 | -- | -- | -- | -- | -- |
| DEC | | | | | | | | | | |
| 18... | 1440 | 2000 | -- | -- | 5.5 | -- | -- | -- | -- | -- |
| 31... | 0830 | 5130 | 480 | -- | 7.0 | -- | -- | -- | -- | -- |
| JAN | | | | | | | | | | |
| 08... | 0920 | 1580 | 870 | 7.8 | 6.0 | 35 | 3.7 | 11.4 | 91 | 2.9 |
| 29... | 1445 | 5420 | -- | -- | 6.0 | -- | -- | -- | -- | -- |
| FEB | | | | | | | | | | |
| 29... | 0915 | 5100 | 1750 | -- | 10.0 | -- | -- | -- | -- | -- |
| MAR | | | | | | | | | | |
| 11... | 1415 | 1700 | 1340 | 7.9 | 13.0 | 30 | 6.9 | 10.8 | 103 | 4.0 |
| APR | | | | | | | | | | |
| 15... | 1620 | 5790 | -- | -- | 14.0 | -- | -- | -- | -- | -- |
| MAY | | | | | | | | | | |
| 20... | 1450 | 10000 | 230 | 7.8 | 24.5 | 190 | 80 | 7.4 | 88 | 2.3 |
| 20... | 1645 | 10000 | -- | -- | 24.5 | -- | -- | -- | -- | -- |
| JUL | | | | | | | | | | |
| 08... | 1510 | 2940 | 1830 | 8.1 | 33.0 | 25 | 10 | 8.8 | 122 | 2.8 |
| AUG | | | | | | | | | | |
| 20... | 1245 | 2880 | 1920 | 8.4 | 29.0 | 5 | 6.5 | 8.2 | 108 | 2.4 |
| SEP | | | | | | | | | | |
| 30... | 0740 | 13300 | 300 | -- | 17.0 | -- | -- | -- | -- | -- |

| DATE | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) |
|---|---|---|---|---|---|---|---|---|---|
| NOV | | | | | | | | | |
| 13... | 250 | 150 | 67 | 19 | 150 | 4.2 | 6.5 | 120 | 0 |
| 14... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DEC | | | | | | | | | |
| 18... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 31... | 120 | 47 | 35 | 8.1 | 51 | 2.0 | 3.3 | 90 | 0 |
| JAN | | | | | | | | | |
| 08... | 260 | 70 | 74 | 18 | 87 | 2.4 | 4.6 | 230 | 0 |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FEB | | | | | | | | | |
| 29... | 330 | 220 | 91 | 25 | 220 | 5.3 | 6.9 | 140 | 0 |
| MAR | | | | | | | | | |
| 11... | 310 | 130 | 88 | 23 | 150 | 3.7 | 5.3 | 220 | 0 |
| APR | | | | | | | | | |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY | | | | | | | | | |
| 20... | 61 | 16 | 18 | 4.0 | 19 | 1.1 | 2.5 | 56 | 0 |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL | | | | | | | | | |
| 08... | 350 | 240 | 94 | 28 | 220 | 5.1 | 6.3 | 140 | 0 |
| AUG | | | | | | | | | |
| 20... | 370 | 260 | 100 | 30 | 240 | 5.4 | 6.8 | 140 | 1 |
| SEP | | | | | | | | | |
| 30... | 97 | 13 | 30 | 5.4 | 21 | .9 | 3.4 | 100 | 0 |

## 07336820 RED RIVER NEAR DE KALB, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) | SOLIDS, VOLA-TILE, SUS-PENDED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) |
|---|---|---|---|---|---|---|---|---|---|
| NOV 13... | 150 | 230 | .3 | 5.0 | 687 | 68 | 0 | .22 | .020 |
| 14... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DEC 18... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 31... | 57 | 67 | .1 | 3.2 | 269 | -- | -- | -- | -- |
| JAN 08... | 90 | 120 | .2 | 7.1 | 515 | 24 | 23 | .1 | .020 |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FEB 29... | 240 | 360 | .3 | 3.6 | 1020 | -- | -- | -- | -- |
| MAR 11... | 170 | 230 | .3 | 4.6 | 780 | 17 | 6 | .00 | .000 |
| APR 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 20... | 24 | 27 | .1 | 5.9 | 128 | 164 | 57 | .26 | .020 |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL 08... | 230 | 360 | .5 | 3.7 | 1010 | 37 | 1 | .00 | .000 |
| AUG 20... | 250 | 380 | .4 | 4.9 | 1080 | 73 | 5 | .00 | .010 |
| SEP 30... | 30 | 28 | .2 | 5.2 | 167 | -- | -- | -- | -- |

| DATE | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|
| NOV 13... | .24 | .020 | 2.6 | 2.6 | .100 | 7.3 | -- | -- | -- |
| 14... | -- | -- | -- | -- | -- | -- | 60 | 379 | 99 |
| DEC 18... | -- | -- | -- | -- | -- | -- | 0 | .81 | 91 |
| 31... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 08... | .17 | .130 | 1.9 | 2.0 | .240 | 8.0 | -- | -- | -- |
| 29... | -- | -- | -- | -- | -- | -- | 62 | 907 | 84 |
| FEB 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 11... | .00 | .020 | 1.3 | 1.3 | .070 | 8.6 | 40 | 184 | 74 |
| APR 15... | -- | -- | -- | -- | -- | -- | 509 | 7960 | 40 |
| MAY 20... | .28 | .070 | 1.0 | 1.1 | .160 | 15 | -- | -- | -- |
| 20... | -- | -- | -- | -- | -- | -- | 491 | 13300 | 37 |
| JUL 08... | .00 | .040 | .96 | 1.0 | .070 | 11 | 30 | 238 | 86 |
| AUG 20... | .00 | .020 | 1.6 | 1.6 | .110 | 15 | 45 | 350 | -- |
| SEP 30... | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | TIME | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| JAN 08... | 0920 | 1 | 100 | 1 | 0 | 1 | 60 |
| MAR 11... | 1415 | 0 | 200 | <1 | 0 | 3 | 20 |
| MAY 20... | 1450 | 1 | 40 | 0 | 0 | 1 | 120 |
| JUL 08... | 1510 | 1 | 200 | <1 | 0 | 1 | <10 |

## 07336820 RED RIVER NEAR DE KALB, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY DISSOLVED (UG/L AS HG) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| JAN 08... | 2 | 120 | .0 | 0 | 0 | 7 |
| MAR 11... | 0 | 90 | .0 | 0 | 0 | <3 |
| MAY 20... | 0 | 0 | .0 | 0 | 0 | 10 |
| JUL 08... | 0 | 9 | .0 | 0 | 0 | 8 |

| DATE | TIME | PCB, TOTAL (UG/L) | PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) | NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | CHLORDANE, TOTAL (UG/L) | CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| MAR 11... | 1415 | .0 | 0 | .00 | .00 | .0 | .0 | 0 | .00 | .0 |
| JUL 08... | 1510 | .0 | 0 | .00 | .00 | .0 | .0 | 0 | .00 | .0 |

| DATE | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) | DIAZINON, TOTAL (UG/L) | DIELDRIN TOTAL (UG/L) | DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | ENDOSULFAN, TOTAL (UG/L) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| MAR 11... | .00 | .1 | .00 | .0 | .00 | .00 | .0 | .00 | .00 | .0 |
| JUL 08... | .00 | .0 | .00 | .0 | .00 | .00 | .0 | .00 | .00 | .0 |

| DATE | ETHION, TOTAL (UG/L) | HEPTACHLOR, TOTAL (UG/L) | HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) | HEPTACHLOR EPOXIDE TOTAL (UG/L) | HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) | MALATHION, TOTAL (UG/L) | METHOXYCHLOR, TOTAL (UG/L) | METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| MAR 11... | .00 | .00 | .0 | .00 | .0 | .00 | .0 | .00 | .00 | .0 |
| JUL 08... | .00 | .00 | .0 | .00 | .0 | .00 | .0 | .00 | .00 | .0 |

| DATE | METHYL PARATHION, TOTAL (UG/L) | METHYL TRITHION, TOTAL (UG/L) | MIREX, TOTAL (UG/L) | PARATHION, TOTAL (UG/L) | TOXAPHENE, TOTAL (UG/L) | TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) | TOTAL TRITHION (UG/L) | 2,4-D, TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) | SILVEX, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| MAR 11... | .00 | .00 | .00 | .01 | 0 | 0 | .00 | .04 | .00 | .00 |
| JUL 08... | .00 | .00 | .00 | .00 | 0 | 0 | .00 | .00 | .00 | .00 |

## 07336820 RED RIVER NEAR DE KALB, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 78360 | 1760 | 1020 | 215000 | 350 | 73200 | 240 | 51100 | 370 |
| NOV. | 1979 | 63164 | 1210 | 682 | 116000 | 210 | 36000 | 150 | 25000 | 290 |
| DEC. | 1979 | 94036 | 722 | 399 | 101000 | 120 | 29500 | 80 | 20400 | 190 |
| JAN. | 1980 | 116980 | 837 | 462 | 146000 | 130 | 42600 | 93 | 29400 | 210 |
| FEB. | 1980 | 193260 | 841 | 470 | 245000 | 140 | 74100 | 98 | 51300 | 210 |
| MAR. | 1980 | 77252 | 1480 | 845 | 176000 | 280 | 57800 | 190 | 40300 | 330 |
| APR. | 1980 | 120500 | 793 | 437 | 142000 | 130 | 41100 | 87 | 28400 | 200 |
| MAY | 1980 | 223120 | 544 | 297 | 179000 | 83 | 50000 | 57 | 34400 | 140 |
| JUNE | 1980 | 477280 | 1290 | 738 | 950000 | 240 | 311000 | 170 | 216500 | 290 |
| JULY | 1980 | 96810 | 1850 | 1080 | 283000 | 370 | 97800 | 260 | 68400 | 380 |
| AUG. | 1980 | 91340 | 1900 | 1110 | 273000 | 390 | 95200 | 270 | 66600 | 390 |
| SEPT | 1980 | 84316 | 1420 | 823 | 187000 | 280 | 63500 | 190 | 44300 | 300 |
| TOTAL | | 1716418 | ** | ** | 3015000 | ** | 972000 | ** | 676000 | ** |
| WTD. AVG. | | 4690 | 1140 | 651 | ** | 210 | ** | 150 | ** | 260 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1830 | 1310 | 1070 | 666 | 1300 | 1800 | 1420 | 451 | 650 | 1610 | 1600 | 1960 |
| 2 | 1780 | 1370 | 1150 | 724 | 1790 | 1690 | 1170 | 477 | 590 | 1550 | 2060 | 1970 |
| 3 | 1830 | 1300 | 1490 | 556 | 1500 | 1650 | 1010 | 367 | 484 | 1530 | 2010 | 1930 |
| 4 | 1670 | 1560 | 1460 | 444 | 1240 | 1660 | 1020 | 450 | 381 | 1750 | 1970 | 1650 |
| 5 | 1850 | 1430 | 1390 | 646 | 1430 | 1920 | 1060 | 697 | 289 | 2040 | 1980 | 1500 |
| 6 | 1870 | 1400 | 1670 | 700 | 1540 | 1850 | 800 | 824 | 700 | 1950 | 1860 | 1480 |
| 7 | 1800 | 1350 | 1520 | 764 | 1250 | 1870 | 686 | 469 | 1250 | 1930 | 1730 | 1450 |
| 8 | 1860 | 1480 | 1410 | 898 | 570 | 1740 | 749 | 269 | 1840 | 1820 | 1710 | 1390 |
| 9 | 1680 | 1400 | 1460 | 980 | 612 | 1550 | 620 | 279 | 1710 | 1770 | 1690 | 1830 |
| 10 | 1800 | 812 | 1510 | 1150 | 550 | 1350 | 481 | 410 | 1680 | 1800 | 1880 | 1900 |
| 11 | 1720 | 934 | 1610 | 1180 | 450 | 1320 | 454 | 750 | 1720 | 1700 | 2070 | 1880 |
| 12 | 1680 | 950 | 1560 | 1100 | 426 | 1340 | 500 | 1100 | 1750 | 1860 | 2040 | 1780 |
| 13 | 1850 | 1230 | 1430 | 1400 | 338 | 1480 | 550 | 1460 | 1960 | 2140 | 1990 | 1850 |
| 14 | 1950 | 1160 | 850 | 1590 | 322 | 1410 | 642 | 1180 | 2030 | 2050 | 1950 | 1940 |
| 15 | 1800 | 1130 | 846 | 1500 | 437 | 1180 | 367 | 1010 | 2000 | 2000 | 1730 | 2030 |
| 16 | 1860 | 1090 | 854 | 1450 | 458 | 1220 | 376 | 848 | 1990 | 1980 | 2050 | 2010 |
| 17 | 1830 | 1160 | 850 | 1360 | 475 | 1250 | 340 | 465 | 1960 | 1950 | 2020 | 1960 |
| 18 | 1650 | 1300 | 1010 | 1420 | 500 | 1110 | 692 | 364 | 1880 | 1960 | 1980 | 1840 |
| 19 | 1540 | 1420 | 1160 | 1330 | 429 | 1170 | 762 | 319 | 1930 | 1990 | 1970 | 1730 |
| 20 | 1750 | 1570 | 1270 | 1220 | 550 | 1320 | 830 | 269 | 1890 | 2000 | 1850 | 1870 |
| 21 | 1550 | 1120 | 1220 | 858 | 1310 | 1470 | 892 | 202 | 1290 | 2010 | 1930 | 1820 |
| 22 | 1430 | 1200 | 1100 | 526 | 1230 | 1380 | 1260 | 206 | 900 | 1880 | 1680 | 1770 |
| 23 | 1700 | 1250 | 1030 | 555 | 1050 | 1550 | 1410 | 297 | 1050 | 1770 | 1690 | 1800 |
| 24 | 1860 | 1220 | 450 | 592 | 1390 | 1720 | 1290 | 247 | 1100 | 1690 | 1820 | 1770 |
| 25 | 1630 | 1150 | 380 | 502 | 1480 | 1500 | 1110 | 320 | 1190 | 1550 | 1950 | 1810 |
| 26 | 1710 | 1200 | 490 | 684 | 1380 | 1250 | 954 | 385 | 1270 | 1400 | 1970 | 1930 |
| 27 | 1640 | 1190 | 536 | 900 | 1500 | 1030 | 965 | 528 | 1360 | 1550 | 1860 | 1850 |
| 28 | 1750 | 1130 | 446 | 1000 | 1250 | 854 | 973 | 1070 | 1450 | 1700 | 1750 | 1500 |
| 29 | 1600 | 1080 | 368 | 1120 | 1750 | 900 | 996 | 1270 | 1550 | 1760 | 1660 | 550 |
| 30 | 1650 | 1130 | 370 | 950 | --- | 1010 | 894 | 1490 | 1640 | 1650 | 1570 | 300 |
| 31 | 1450 | --- | 480 | 828 | --- | 981 | --- | 975 | --- | 1690 | 1860 | --- |
| MEAN | 1730 | 1230 | 1050 | 955 | 983 | 1400 | 842 | 627 | 1380 | 1810 | 1870 | 1700 |

## 07336820 RED RIVER NEAR DE KALB, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24.0 | 13.0 | 5.0 | 6.0 | --- | 8.0 | 13.0 | 19.0 | --- | 30.0 | 29.0 | 27.0 |
| 2 | --- | 13.0 | --- | 7.0 | 2.0 | 5.0 | 16.0 | 19.0 | 25.0 | 30.0 | 28.0 | 27.0 |
| 3 | 22.0 | 13.0 | 5.0 | 7.0 | --- | 5.0 | 18.0 | 19.0 | 25.0 | 30.0 | --- | 27.0 |
| 4 | 20.0 | 12.0 | 5.0 | 6.0 | 4.0 | 6.0 | 16.0 | --- | 25.0 | --- | 27.0 | 27.0 |
| 5 | 18.0 | 12.0 | 7.0 | 5.0 | 5.0 | 7.0 | 16.0 | 21.0 | 26.0 | 30.0 | 27.0 | 28.0 |
| 6 | 18.0 | 12.0 | 8.0 | --- | 5.0 | 8.0 | --- | 22.0 | 25.0 | 30.0 | 27.0 | 27.0 |
| 7 | 18.0 | 11.0 | 6.0 | 7.0 | 5.0 | 11.0 | 17.0 | 22.0 | 25.0 | 30.0 | 28.0 | 27.0 |
| 8 | 20.0 | 11.0 | 7.0 | 7.0 | 4.0 | 13.0 | 17.0 | 22.0 | --- | 30.0 | --- | 27.0 |
| 9 | 21.0 | 13.0 | --- | 5.0 | 3.0 | --- | 16.0 | 18.0 | 24.0 | 30.0 | 30.0 | 27.0 |
| 10 | 17.0 | 11.0 | 8.0 | 6.0 | --- | 14.0 | 16.0 | 21.0 | 24.0 | 30.0 | --- | 27.0 |
| 11 | 17.0 | 10.0 | 8.0 | 8.0 | --- | 14.0 | 17.0 | --- | 24.0 | 31.0 | 28.0 | 27.0 |
| 12 | 18.0 | 9.0 | 8.0 | 7.0 | 2.0 | 11.0 | --- | --- | 24.0 | 30.0 | --- | 27.0 |
| 13 | 17.0 | 9.0 | 8.0 | --- | 3.0 | 12.0 | --- | 23.0 | 24.0 | 30.0 | 29.0 | --- |
| 14 | --- | 9.0 | 7.0 | 7.0 | 5.0 | 11.0 | 8.0 | 22.0 | 24.0 | 30.0 | 29.0 | --- |
| 15 | 17.0 | 9.0 | 7.0 | 9.0 | 7.0 | 13.0 | 10.0 | 20.0 | --- | 30.0 | 28.0 | 27.0 |
| 16 | 18.0 | 10.0 | 6.0 | --- | 6.0 | --- | 13.0 | 20.0 | 25.0 | --- | 28.0 | 27.0 |
| 17 | 19.0 | 11.0 | 3.0 | 10.0 | --- | --- | 16.0 | 21.0 | 27.0 | 30.0 | --- | 27.0 |
| 18 | 18.0 | --- | 3.0 | 10.0 | 4.0 | 11.0 | 16.0 | 23.0 | 27.0 | 30.0 | 28.0 | 25.0 |
| 19 | 20.0 | 12.0 | 3.0 | 11.0 | 6.0 | 13.0 | 17.0 | 23.0 | --- | 30.0 | 28.0 | 24.0 |
| 20 | --- | 15.0 | 7.0 | --- | 7.0 | 14.0 | --- | 22.0 | 26.0 | 30.0 | 28.0 | 25.0 |
| 21 | --- | 9.0 | 12.0 | 10.0 | 10.0 | 13.0 | 21.0 | 23.0 | 25.0 | 30.0 | 28.0 | --- |
| 22 | 21.0 | --- | 14.0 | 9.0 | 11.0 | 13.0 | 21.0 | 22.0 | --- | 29.0 | 28.0 | 26.0 |
| 23 | 18.0 | --- | --- | 7.0 | 11.0 | --- | 21.0 | 22.0 | 25.0 | --- | 27.0 | 26.0 |
| 24 | 17.0 | --- | --- | 7.0 | 11.0 | 11.0 | 22.0 | 23.0 | 26.0 | 28.0 | --- | 25.0 |
| 25 | 16.0 | --- | --- | 8.0 | 10.0 | 11.0 | 21.0 | --- | 27.0 | 27.0 | 27.0 | --- |
| 26 | 17.0 | 9.0 | 9.0 | 8.0 | 8.0 | --- | 19.0 | 25.0 | --- | 28.0 | 27.0 | --- |
| 27 | 17.0 | 10.0 | 10.0 | --- | 8.0 | 13.0 | --- | 25.0 | --- | --- | 27.0 | --- |
| 28 | --- | 10.0 | 10.0 | --- | 10.0 | 13.0 | 17.0 | 25.0 | 30.0 | 27.0 | --- | --- |
| 29 | 17.0 | 6.0 | 9.0 | 6.0 | 10.0 | --- | 18.0 | 24.0 | --- | 28.0 | 26.0 | --- |
| 30 | 18.0 | 5.0 | 8.0 | --- | --- | 13.0 | 19.0 | 25.0 | 30.0 | 29.0 | 25.0 | 17.0 |
| 31 | 15.0 | --- | 7.0 | 3.0 | --- | 11.0 | --- | 25.0 | --- | 32.0 | 28.0 | --- |
| MEAN | 18.5 | 10.5 | 7.5 | 7.5 | 6.5 | 11.0 | 17.0 | 22.0 | 25.5 | 29.5 | 27.5 | 26.0 |

## 07337000 RED RIVER AT INDEX, AR

LOCATION.--Lat 33°33'07", long 94°02'28", in NW1/4SW1/4 sec.7, T.14 S., R.28 W., Miller County, Hydrologic Unit 11140106, near right bank on downstream side of bridge on U.S. Highway 71 at Index, 2.2 mi (3.5 km) south of Ogden, 20.6 mi (33.1 km) upstream from Little River, and at mile 485.3 (780.8 km).

DRAINAGE AREA.--48,030 mi$^2$ (124,400 km$^2$), of which 5,936 mi$^2$ (15,370 km$^2$) probably is noncontributing.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1936 to current year. Gage-height records collected at same site since 1917 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 246.87 ft (75.246 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 12, 1939, nonrecording gage at present site and datum, and Dec. 12, 1939, to July 19, 1979, water-stage recorder at site 500 ft (152 m) downstream at present datum.

REMARKS.--Water-discharge records good. Some regulation by Lake Texoma (station 07331500), 241 mi (388 km) upstream since Oct. 31, 1943, capacity, 5,392,900 acre-ft (6.65 km$^3$), by Pat Mayse Lake (station 07335390) since Sept. 28, 1967, capacity, 352,700 acre-ft (435 hm$^3$), and by Hugo Lake in Oklahoma since Jan. 18, 1974, capacity, 966,700 acre-ft (1,190 hm$^3$).

AVERAGE DISCHARGE.--44 years, 11,590 ft$^3$/s (328.2 m$^3$/s), 8,397,000 acre-ft/yr (10.4 km$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 297,000 ft$^3$/s (8,410 m$^3$/s) Feb. 23, 1938, gage height, 34.25 ft (10.439 m); minimum, 378 ft$^3$/s (10.7 m$^3$/s) Nov. 28, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 38,000 ft$^3$/s (1,080 m$^3$/s) June 7, gage height, 13.93 ft (4.246 m); minimum daily, 1,330 ft$^3$/s (37.7 m$^3$/s) Dec. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3800 | 2590 | 1330 | 5010 | 4440 | 4600 | 3710 | 3580 | 7920 | 5800 | 3000 | 2240 |
| 2 | 4160 | 2510 | 1360 | 4950 | 4040 | 5370 | 4070 | 5350 | 17200 | 5300 | 2400 | 2590 |
| 3 | 4340 | 2270 | 1720 | 4950 | 4370 | 4920 | 3640 | 5370 | 23500 | 4240 | 3500 | 3070 |
| 4 | 4240 | 2240 | 1640 | 4500 | 5200 | 3920 | 3100 | 5110 | 22000 | 3280 | 4000 | 3430 |
| 5 | 3280 | 2750 | 1450 | 3630 | 4270 | 3680 | 2880 | 5520 | 17500 | 3090 | 4300 | 2770 |
| 6 | 3400 | 2460 | 1540 | 2590 | 5350 | 4240 | 2850 | 6160 | 21700 | 4040 | 4200 | 1940 |
| 7 | 3880 | 2020 | 1850 | 2130 | 4590 | 4450 | 3220 | 8330 | 36300 | 4290 | 3900 | 1610 |
| 8 | 3520 | 1880 | 1670 | 1900 | 5110 | 4400 | 4030 | 11200 | 34800 | 4320 | 3370 | 1450 |
| 9 | 3410 | 2010 | 1530 | 1790 | 8380 | 3690 | 4350 | 10300 | 27700 | 3680 | 2210 | 1360 |
| 10 | 3160 | 2320 | 1660 | 1880 | 9980 | 2810 | 3900 | 7500 | 24700 | 3160 | 2090 | 1810 |
| 11 | 2850 | 3150 | 1590 | 1920 | 15600 | 2370 | 3400 | 4730 | 23800 | 3000 | 2310 | 2360 |
| 12 | 2500 | 3770 | 1670 | 1790 | 15400 | 2180 | 2750 | 3230 | 21400 | 2740 | 2790 | 2380 |
| 13 | 2360 | 3950 | 2060 | 1680 | 14600 | 2230 | 3310 | 2780 | 18900 | 2990 | 2900 | 2240 |
| 14 | 2780 | 3790 | 2330 | 1760 | 14000 | 2290 | 6110 | 2530 | 17700 | 4450 | 3280 | 2370 |
| 15 | 2700 | 2920 | 2670 | 2300 | 12200 | 2110 | 7800 | 2140 | 17100 | 5280 | 3500 | 2540 |
| 16 | 2550 | 2300 | 2490 | 2300 | 10600 | 1930 | 8720 | 2230 | 15300 | 4990 | 3500 | 2750 |
| 17 | 3060 | 1950 | 2050 | 2130 | 9310 | 1900 | 7580 | 3340 | 12800 | 4780 | 3540 | 3160 |
| 18 | 3130 | 2160 | 1860 | 2090 | 7260 | 1860 | 7580 | 5860 | 10200 | 4250 | 3580 | 3410 |
| 19 | 2580 | 2320 | 1810 | 2080 | 5760 | 1750 | 8050 | 9090 | 8000 | 3800 | 3950 | 2990 |
| 20 | 2120 | 2310 | 1970 | 2300 | 5130 | 1880 | 6740 | 12200 | 9150 | 3760 | 4970 | 2310 |
| 21 | 1850 | 2610 | 1800 | 4860 | 5950 | 2070 | 4620 | 11900 | 16000 | 3900 | 3300 | 2140 |
| 22 | 1720 | 3500 | 1650 | 8330 | 7190 | 1820 | 3090 | 9500 | 19800 | 3900 | 2890 | 2460 |
| 23 | 1850 | 3320 | 2730 | 13100 | 7070 | 1710 | 2960 | 8250 | 20300 | 3400 | 2750 | 2250 |
| 24 | 2660 | 2590 | 6140 | 13500 | 6200 | 2080 | 3030 | 8510 | 17000 | 3500 | 2740 | 2080 |
| 25 | 3690 | 2100 | 10400 | 13300 | 5520 | 2260 | 2920 | 8300 | 13900 | 3100 | 2950 | 1990 |
| 26 | 3290 | 2000 | 11600 | 9150 | 4850 | 1960 | 2730 | 7900 | 11200 | 1900 | 3430 | 1750 |
| 27 | 2540 | 1910 | 9120 | 7980 | 4740 | 1850 | 2710 | 7670 | 8750 | 1800 | 3690 | 1640 |
| 28 | 2160 | 1720 | 6920 | 8000 | 4710 | 2300 | 2730 | 7210 | 7600 | 2700 | 3790 | 1770 |
| 29 | 1930 | 1540 | 5780 | 7980 | 4200 | 2440 | 2320 | 7210 | 6320 | 2900 | 2430 | 2660 |
| 30 | 1840 | 1420 | 5670 | 7850 | --- | 2750 | 2120 | 7210 | 5930 | 2400 | 2010 | 7700 |
| 31 | 2270 | --- | 5370 | 7650 | --- | 3490 | --- | 7260 | --- | 2200 | 1970 | --- |
| TOTAL | 89620 | 74380 | 103430 | 155380 | 216020 | 87310 | 127020 | 207470 | 514470 | 112940 | 99240 | 75220 |
| MEAN | 2891 | 2479 | 3336 | 5012 | 7449 | 2816 | 4234 | 6693 | 17150 | 3643 | 3201 | 2507 |
| MAX | 4340 | 3950 | 11600 | 13500 | 15600 | 5370 | 8720 | 12200 | 36300 | 5800 | 4970 | 7700 |
| MIN | 1720 | 1420 | 1330 | 1680 | 4040 | 1710 | 2120 | 2140 | 5930 | 1800 | 1970 | 1360 |
| AC-FT | 177800 | 147500 | 205200 | 308200 | 428500 | 173200 | 251900 | 411500 | 1020000 | 224000 | 196800 | 149200 |

CAL YR 1979 TOTAL 3782830 MEAN 10360 MAX 62600 MIN 1330 AC-FT 7503000
WTR YR 1980 TOTAL 1862500 MEAN 5089 MAX 36300 MIN 1330 AC-FT 3694000

## 07337000 RED RIVER AT INDEX, AR--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947-56, April to September 1980.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) |
|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | | | | | |
| 04... | 1100 | 3280 | -- | -- | -- | -- | -- | -- | -- | -- |
| APR | | | | | | | | | | |
| 17... | 1400 | 8000 | 314 | 7.8 | 14.5 | 100 | 8.8 | 86 | 830 | K90 |
| 28... | 1300 | 2980 | 995 | 8.2 | 18.0 | 18 | 9.5 | 100 | K230 | K60 |
| JUN | | | | | | | | | | |
| 03... | 1000 | 21200 | 490 | 7.2 | 26.0 | 130 | 6.4 | 78 | K5000 | K1600 |
| 24... | 1030 | 16200 | 920 | 7.8 | 27.5 | 78 | -- | -- | <3 | 400 |
| JUL | | | | | | | | | | |
| 22... | 0830 | 3960 | 1925 | 8.5 | 31.0 | 7.6 | 6.1 | 81 | K23 | -- |
| SEP | | | | | | | | | | |
| 04... | 0835 | 3400 | 1950 | 8.1 | 28.5 | 25 | 8.2 | 104 | K50 | 110 |

| DATE | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | ALKA-LINITY (MG/L AS CACO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | | | | | |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| APR | | | | | | | | | | |
| 17... | 82 | 27 | 24 | 5.3 | 25 | 1.2 | 2.6 | 55 | 32 | 33 |
| 28... | 200 | 84 | 57 | 15 | 100 | 3.0 | 4.0 | 120 | 110 | 140 |
| JUN | | | | | | | | | | |
| 03... | 110 | 46 | 31 | 9.0 | 45 | 1.8 | 3.1 | 68 | 51 | 64 |
| 24... | 170 | 80 | 46 | 14 | 100 | 3.3 | 4.5 | 93 | 100 | 160 |
| JUL | | | | | | | | | | |
| 22... | 380 | 250 | 100 | 31 | 260 | 5.8 | 7.4 | 130 | 260 | 390 |
| SEP | | | | | | | | | | |
| 04... | 350 | 220 | 93 | 29 | 240 | 5.6 | 7.6 | 130 | 230 | 390 |

| DATE | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) |
|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | | | | | |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| APR | | | | | | | | | | |
| 17... | .1 | 5.1 | 183 | 162 | .53 | .49 | .180 | .040 | 1.1 | .48 |
| 28... | .2 | 2.3 | 525 | 501 | .02 | .01 | .010 | .020 | 1.1 | .79 |
| JUN | | | | | | | | | | |
| 03... | .1 | 5.7 | 290 | 251 | .42 | .36 | .180 | .070 | 2.8 | 2.5 |
| 24... | .2 | 4.5 | 477 | 486 | .23 | .25 | .070 | .090 | 1.1 | .64 |
| JUL | | | | | | | | | | |
| 22... | .6 | 3.4 | 1180 | 1130 | .00 | .02 | .000 | .010 | 1.3 | 1.3 |
| SEP | | | | | | | | | | |
| 04... | .3 | 4.5 | 1120 | 1070 | .00 | .00 | .000 | .000 | 1.4 | 1.2 |

| DATE | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | PHOS-PHORUS, DIS-SOLVED (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | CARBON, ORGANIC DIS-SOLVED (MG/L AS C) | CARBON, ORGANIC SUS-PENDED (MG/L AS C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | | | | | |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| APR | | | | | | | | | | |
| 17... | 1.3 | .52 | .240 | .060 | 18 | -- | -- | 330 | 7130 | 66 |
| 28... | 1.1 | .81 | .120 | .030 | -- | 14 | .8 | 39 | 314 | 78 |
| JUN | | | | | | | | | | |
| 03... | 3.0 | 2.6 | .300 | .050 | 16 | -- | -- | 1022 | 58500 | 56 |
| 24... | 1.2 | .73 | .140 | .060 | 13 | -- | -- | 194 | 8490 | 97 |
| JUL | | | | | | | | | | |
| 22... | 1.3 | 1.3 | .100 | .020 | -- | 22 | .9 | 31 | 331 | 54 |
| SEP | | | | | | | | | | |
| 04... | 1.4 | 1.2 | .130 | .030 | 21 | -- | -- | 64 | 588 | 70 |

## 07337000 RED RIVER AT INDEX, AR--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUSPENDED TOTAL (UG/L AS AS) | ARSENIC DISSOLVED (UG/L AS AS) | BARIUM, TOTAL RECOVERABLE (UG/L AS BA) | BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) | BARIUM, DISSOLVED (UG/L AS BA) | CADMIUM TOTAL RECOVERABLE (UG/L AS CD) | CADMIUM DISSOLVED (UG/L AS CD) | CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) | CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| APR 17... | 1400 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | 1300 | 1 | 0 | 1 | 300 | 200 | 100 | 1 | <1 | 0 | 0 |
| JUN 03... | 1000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL 22... | 0830 | 1 | 0 | 1 | 200 | 0 | 200 | 1 | <1 | 10 | 0 |
| SEP 04... | 0835 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | CHROMIUM, DISSOLVED (UG/L AS CR) | COBALT, TOTAL RECOVERABLE (UG/L AS CO) | COBALT, DISSOLVED (UG/L AS CO) | COPPER, TOTAL RECOVERABLE (UG/L AS CU) | COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) | COPPER, DISSOLVED (UG/L AS CU) | IRON, TOTAL RECOVERABLE (UG/L AS FE) | IRON, SUSPENDED RECOVERABLE (UG/L AS FE) | IRON, DISSOLVED (UG/L AS FE) | LEAD, TOTAL RECOVERABLE (UG/L AS PB) |
|---|---|---|---|---|---|---|---|---|---|---|
| APR 17... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | 0 | 0 | <3 | 8 | 3 | 5 | 1100 | 1100 | 50 | 8 |
| JUN 03... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL 22... | 10 | 1 | <3 | 8 | 8 | 0 | 680 | 620 | 60 | 10 |
| SEP 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) | MANGANESE, SUSPENDED RECOV. (UG/L AS MN) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY TOTAL RECOVERABLE (UG/L AS HG) | MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) | MERCURY DISSOLVED (UG/L AS HG) | NICKEL, TOTAL RECOVERABLE (UG/L AS NI) | NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) |
|---|---|---|---|---|---|---|---|---|---|---|
| APR 17... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | 5 | 3 | 160 | 130 | 30 | 1.5 | .8 | .7 | 6 | 4 |
| JUN 03... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL 22... | 10 | 0 | 90 | 60 | 30 | .6 | .2 | .4 | 6 | 6 |
| SEP 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | NICKEL, DISSOLVED (UG/L AS NI) | SELENIUM, TOTAL (UG/L AS SE) | SELENIUM, SUSPENDED TOTAL (UG/L AS SE) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, TOTAL RECOVERABLE (UG/L AS AG) | SILVER, SUSPENDED RECOVERABLE (UG/L AS AG) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, TOTAL RECOVERABLE (UG/L AS ZN) | ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|---|---|---|
| APR 17... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| 28... | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | -- | <3 |
| JUN 03... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| JUL 22... | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 50 | 40 | 9 |
| SEP 04... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |

## 07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX

LOCATION.--Lat 33°21'20", long 95°35'39", Hopkins-Delta County line, Hydrologic Unit 11140301, on left bank of cut channel at downstream side of bridge on State Highways 19 and 154, 1.0 mi (1.6 km) downstream from Big Creek, 1.0 mi (1.6 km) upstream from Brushy Creek, 4.5 mi (7.2 km) downstream from Doctors Creek, and 5.6 mi (9.0 km) southeast of Cooper.

DRAINAGE AREA.--527 mi² (1,365 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1942 to current year. Monthly discharge only for some periods, published in WSP 1311.

GAGE.--Water-stage recorder. Datum of gage is 371.91 ft (113.358 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1970, at datum 3.00 ft (0.914 m) higher. May 9, 1942, to Nov. 8, 1949, nonrecording gage, and Nov. 9, 1949, to May 13, 1955, water-stage recorder at site 700 ft (213 m) to right of present gage.

REMARKS.--Water-discharge records good. Small diversions upstream from station.

AVERAGE DISCHARGE.--38 years (water years 1943-80), 403 ft³/s (11.41 m³/s), 10.39 in/yr (264 mm/yr), 292,000 acre-ft/yr (360 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,500 ft³/s (1,200 m³/s) Dec. 10, 1971, gage height, 26.15 ft (7.971 m), from floodmark in gage well; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,600 ft³/s (159 m³/s) Jan. 23 at 2330 hours, gage height, 20.09 ft (6.123 m), no peak above base of 8,000 ft³/s (227 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.0 | 94 | 1.3 | 15 | 109 | 5.6 | 14 | 8.1 | 3.8 | 2.0 | .30 | .00 |
| 2 | .83 | 32 | 1.1 | 12 | 61 | 5.0 | 11 | 227 | 3.1 | 1.4 | .20 | .00 |
| 3 | .53 | 12 | 1.0 | 9.9 | 38 | 4.4 | 8.1 | 1040 | 3.1 | 1.2 | .09 | .00 |
| 4 | .35 | 6.9 | 1.0 | 8.5 | 28 | 4.0 | 6.0 | 482 | 3.8 | .89 | .06 | .00 |
| 5 | .44 | 4.3 | 1.0 | 7.2 | 21 | 3.6 | 4.6 | 112 | 4.4 | .65 | .05 | .00 |
| 6 | .42 | 2.7 | 1.0 | 6.1 | 15 | 3.5 | 3.6 | 52 | 5.0 | .43 | .05 | .00 |
| 7 | .32 | 1.7 | 1.1 | 4.8 | 12 | 3.2 | 3.2 | 28 | 4.9 | .32 | .04 | .00 |
| 8 | .31 | 1.1 | 1.2 | 3.6 | 608 | 2.9 | 2.7 | 46 | 4.6 | .24 | .03 | .00 |
| 9 | .36 | .91 | 1.1 | 2.7 | 2380 | 2.7 | 2.4 | 25 | 4.3 | .18 | .03 | .00 |
| 10 | .36 | 1.4 | .91 | 2.5 | 2960 | 2.4 | 2.1 | 13 | 4.2 | .11 | .03 | .00 |
| 11 | .52 | 2.0 | 1.0 | 2.5 | 2580 | 2.4 | 1.8 | 8.6 | 4.2 | .07 | .01 | .00 |
| 12 | .62 | 3.5 | 1.3 | 1.9 | 999 | 2.8 | 2.1 | 6.4 | 4.3 | .07 | .01 | .00 |
| 13 | .48 | 7.3 | 47 | 1.6 | 477 | 2.7 | 375 | 5.5 | 3.9 | .07 | .00 | .00 |
| 14 | .68 | 6.1 | 64 | 1.3 | 242 | 3.3 | 1760 | 4.7 | 4.3 | .06 | .00 | .00 |
| 15 | 1.6 | 5.0 | 59 | 1.2 | 129 | 5.3 | 1420 | 154 | 4.6 | .06 | .00 | .00 |
| 16 | 2.0 | 4.2 | 24 | 1.1 | 82 | 7.0 | 238 | 3370 | 4.9 | .05 | .00 | .00 |
| 17 | 2.5 | 3.9 | 12 | 1.2 | 54 | 5.5 | 93 | 3250 | 5.2 | .04 | .00 | .00 |
| 18 | 2.4 | 5.1 | 6.5 | 1.2 | 38 | 4.4 | 51 | 3080 | 5.1 | .04 | .00 | .00 |
| 19 | 1.6 | 4.1 | 5.8 | 1.8 | 27 | 3.4 | 31 | 1550 | 5.0 | .03 | .00 | .00 |
| 20 | 9.7 | 3.0 | 4.8 | 201 | 21 | 3.0 | 19 | 215 | 34 | .03 | .00 | .00 |
| 21 | 5.8 | 2.9 | 3.7 | 945 | 19 | 2.6 | 12 | 85 | 43 | .03 | .00 | .00 |
| 22 | 3.3 | 2.4 | 171 | 2640 | 16 | 2.4 | 8.6 | 64 | 34 | .02 | .00 | .00 |
| 23 | 1.9 | 2.0 | 978 | 4490 | 13 | 2.3 | 6.5 | 26 | 136 | .02 | .00 | .00 |
| 24 | 1.3 | 2.0 | 2750 | 4690 | 11 | 2.1 | 4.9 | 17 | 102 | .01 | .00 | .00 |
| 25 | 2.2 | 1.7 | 2790 | 2790 | 10 | 1.9 | 4.7 | 14 | 24 | .00 | .00 | .00 |
| 26 | 5.2 | 1.7 | 2400 | 574 | 9.0 | 2.0 | 95 | 12 | 11 | .00 | .00 | .00 |
| 27 | 3.2 | 1.4 | 351 | 141 | 8.1 | 2.5 | 244 | 10 | 7.9 | .00 | .00 | .00 |
| 28 | 2.2 | 1.3 | 110 | 68 | 7.4 | 4.1 | 81 | 8.8 | 5.6 | 11 | .00 | .00 |
| 29 | 1.5 | 1.2 | 57 | 92 | 6.5 | 9.3 | 30 | 7.4 | 3.8 | 3.2 | .00 | 931 |
| 30 | 1.7 | 1.3 | 33 | 228 | --- | 18 | 13 | 5.9 | 2.7 | 1.1 | .00 | 1510 |
| 31 | 49 | --- | 21 | 189 | --- | 16 | --- | 5.0 | --- | .59 | .00 | --- |
| TOTAL | 104.32 | 219.11 | 9900.81 | 17134.1 | 10981.0 | 140.3 | 4548.3 | 13932.4 | 486.7 | 23.91 | .90 | 2441.00 |
| MEAN | 3.37 | 7.30 | 319 | 553 | 379 | 4.53 | 152 | 449 | 16.2 | .77 | .029 | 81.4 |
| MAX | 49 | 94 | 2790 | 4690 | 2960 | 18 | 1760 | 3370 | 136 | 11 | .30 | 1510 |
| MIN | .31 | .91 | .91 | 1.1 | 6.5 | 1.9 | 1.8 | 4.7 | 2.7 | .00 | .00 | .00 |
| CFSM | .006 | .01 | .61 | 1.05 | .72 | .009 | .29 | .85 | .03 | .001 | .000 | .15 |
| IN. | .01 | .02 | .70 | 1.21 | .78 | .01 | .32 | .98 | .03 | .00 | .00 | .17 |
| AC-FT | 207 | 435 | 19640 | 33990 | 21780 | 278 | 9020 | 27630 | 965 | 47 | 1.8 | 4840 |

CAL YR 1979 TOTAL 199274.63 MEAN 546 MAX 18700 MIN .00 AC-FT 395300
WTR YR 1980 TOTAL 59912.85 MEAN 164 MAX 4690 MIN .00 AC-FT 118800

## 07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1958 to September 1966, October 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1958 to September 1966, October 1967 to current year.
WATER TEMPERATURES: October 1958 to September 1966, October 1967 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,710 micromhos Aug. 14, 1973; minimum daily, 82 micromhos July 2, 1976.
WATER TEMPERATURES: Maximum daily, 36.0°C Aug. 6, 1960, Aug. 10, 1962; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 830 micromhos Mar. 30; minimum daily, 123 micromhos May 16.
WATER TEMPERATURES: Maximum daily, 31.5°C Aug. 8; minimum daily, 2.0°C Dec. 18, Feb. 1, 10, 11.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | | | | | | | |
| 06... | 1015 | 11 | 378 | 7.5 | 7.0 | 100 | 22 | 8.6 | 71 | 2.2 | 77 | 0 |
| JAN | | | | | | | | | | | | |
| 07... | 1435 | 4.5 | 280 | 7.5 | 2.0 | 80 | 25 | 10.6 | 77 | 2.9 | 91 | 0 |
| FEB | | | | | | | | | | | | |
| 12... | 0955 | 987 | 189 | 7.4 | 2.0 | 120 | 94 | 11.4 | 82 | 3.4 | 72 | 7 |
| MAR | | | | | | | | | | | | |
| 10... | 1410 | 2.4 | 535 | 7.8 | 16.5 | 30 | 14 | 10.4 | 106 | 4.7 | 180 | 0 |
| APR | | | | | | | | | | | | |
| 15... | 1235 | 1310 | 164 | 7.3 | 11.0 | 80 | 120 | -- | -- | -- | 54 | 3 |
| MAY | | | | | | | | | | | | |
| 19... | 1350 | 1480 | 164 | 7.0 | 22.0 | 120 | 56 | 3.7 | 42 | 3.5 | 63 | 4 |
| JUN | | | | | | | | | | | | |
| 03... | 1015 | 2.4 | 405 | 7.7 | 25.5 | 70 | 26 | 4.9 | 60 | 2.1 | 140 | 0 |
| JUL | | | | | | | | | | | | |
| 07... | 1430 | .33 | 290 | 7.7 | 33.5 | 50 | 16 | 8.0 | 111 | 1.6 | 100 | 0 |
| AUG | | | | | | | | | | | | |
| 06... | 0650 | .06 | 341 | -- | 26.0 | -- | -- | -- | -- | -- | 120 | 0 |
| 18... | 1630 | .00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP | | | | | | | | | | | | |
| 30... | 0740 | 1520 | 186 | -- | 17.0 | -- | -- | -- | -- | -- | 46 | 0 |

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | | | | | | | |
| 06... | 26 | 3.0 | 52 | 2.6 | 5.1 | 180 | 0 | 22 | 19 | .2 | 9.6 | 226 |
| JAN | | | | | | | | | | | | |
| 07... | 31 | 3.3 | 19 | .9 | 5.6 | 120 | 0 | 23 | 13 | .3 | 11 | 166 |
| FEB | | | | | | | | | | | | |
| 12... | 25 | 2.4 | 13 | .7 | 2.9 | 80 | 0 | 23 | 7.6 | .2 | 7.7 | 121 |
| MAR | | | | | | | | | | | | |
| 10... | 63 | 6.2 | 40 | 1.3 | 4.6 | 240 | 0 | 54 | 23 | .3 | .2 | 310 |
| APR | | | | | | | | | | | | |
| 15... | 18 | 2.2 | 10 | .6 | 3.6 | 62 | 0 | 20 | 5.6 | .2 | 8.0 | 98 |
| MAY | | | | | | | | | | | | |
| 19... | 21 | 2.5 | 7.7 | .4 | 4.8 | 72 | 0 | 12 | 4.0 | .2 | 11 | 99 |
| JUN | | | | | | | | | | | | |
| 03... | 46 | 5.3 | 22 | .8 | 5.8 | 190 | 0 | 23 | 13 | .2 | 13 | 222 |
| JUL | | | | | | | | | | | | |
| 07... | 34 | 3.6 | 18 | .8 | 5.5 | 130 | 0 | 16 | 12 | .4 | 12 | 166 |
| AUG | | | | | | | | | | | | |
| 06... | 40 | 5.6 | 20 | .8 | 5.9 | 180 | 0 | 18 | 9.7 | .4 | 8.1 | 196 |
| 18... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP | | | | | | | | | | | | |
| 30... | 16 | 1.5 | 18 | 1.2 | 3.7 | 76 | 0 | 17 | 7.7 | .3 | 8.8 | 110 |

### 07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) | SOLIDS, VOLA-TILE, SUS-PENDED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | PHENOLS (UG/L) | METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | | | | | | | |
| 06... | 24 | 9 | .00 | .01 | .01 | .01 | 1.6 | 1.6 | .100 | 16 | 3 | .00 |
| JAN | | | | | | | | | | | | |
| 07... | 62 | 28 | .80 | .03 | .83 | .04 | 1.4 | 1.4 | .300 | 14 | 0 | .00 |
| FEB | | | | | | | | | | | | |
| 12... | 210 | 32 | .62 | .04 | .66 | .12 | 1.4 | 1.5 | .290 | 15 | 2 | .00 |
| MAR | | | | | | | | | | | | |
| 10... | 24 | 10 | .00 | .00 | .00 | .04 | 1.5 | 1.5 | .240 | 10 | 0 | .10 |
| APR | | | | | | | | | | | | |
| 15... | 188 | 30 | 1.3 | .04 | 1.3 | .15 | 1.7 | 1.8 | .420 | 20 | 4 | .10 |
| MAY | | | | | | | | | | | | |
| 19... | 74 | 58 | .85 | .04 | .89 | .09 | 2.4 | 2.5 | .380 | 20 | 2 | .00 |
| JUN | | | | | | | | | | | | |
| 03... | 35 | 9 | .31 | .01 | .32 | .08 | .81 | .89 | .310 | 14 | 7 | .00 |
| JUL | | | | | | | | | | | | |
| 07... | 35 | 3 | .02 | .00 | .02 | .08 | 1.0 | 1.1 | .390 | 11 | 0 | .00 |
| AUG | | | | | | | | | | | | |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 18... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP | | | | | | | | | | | | |
| 30... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | TIME | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 07... | 1435 | 9 | 50 | <1 | 0 | 0 | 90 |
| MAR | | | | | | | |
| 10... | 1410 | 5 | 80 | <1 | 0 | 2 | 10 |
| MAY | | | | | | | |
| 19... | 1350 | 8 | 40 | 2 | 0 | 2 | 100 |
| JUL | | | | | | | |
| 07... | 1430 | 31 | 50 | 1 | 0 | 2 | <10 |

| DATE | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY DIS-SOLVED (UG/L AS HG) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| JAN | | | | | | |
| 07... | 0 | 20 | .1 | 0 | 0 | 5 |
| MAR | | | | | | |
| 10... | 0 | 20 | .0 | 0 | 0 | 6 |
| MAY | | | | | | |
| 19... | 1 | 7 | .0 | 0 | 0 | 8 |
| JUL | | | | | | |
| 07... | 0 | 30 | .0 | 0 | 0 | <3 |

## 07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 104.32 | 359 | 204 | 58 | 17 | 4.7 | 30 | 8.5 | 130 |
| NOV. | 1979 | 219.11 | 385 | 219 | 130 | 18 | 11 | 32 | 19 | 130 |
| DEC. | 1979 | 9900.81 | 197 | 111 | 2970 | 8.0 | 214 | 17 | 465 | 77 |
| JAN. | 1980 | 17134.1 | 154 | 87 | 4010 | 5.9 | 272 | 14 | 644 | 63 |
| FEB. | 1980 | 10981.0 | 197 | 111 | 3300 | 7.9 | 234 | 17 | 519 | 78 |
| MAR. | 1980 | 140.3 | 611 | 353 | 134 | 35 | 13 | 46 | 17 | 170 |
| APR. | 1980 | 4548.3 | 250 | 142 | 1740 | 11 | 140 | 21 | 258 | 89 |
| MAY | 1980 | 13932.4 | 153 | 86 | 3230 | 5.8 | 219 | 14 | 519 | 62 |
| JUNE | 1980 | 486.7 | 310 | 176 | 231 | 14 | 19 | 26 | 34 | 110 |
| JULY | 1980 | 23.91 | 278 | 157 | 10 | 12 | 0.8 | 24 | 1.5 | 100 |
| AUG. | 1980 | 0.90 | 310 | 176 | 0.4 | 14 | 0.03 | 26 | 0.06 | 110 |
| SEPT | 1980 | 2441.00 | 201 | 113 | 746 | 8.0 | 53 | 18 | 118 | 79 |
| TOTAL | | 59912.85 | ** | ** | 16600 | ** | 1180 | ** | 2600 | ** |
| WTD. AVG. | | 164 | 182 | 102 | ** | 7.3 | ** | 16 | ** | 71 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980 ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 366 | 392 | 424 | 238 | 262 | 457 | 716 | 277 | 379 | 236 | 280 | --- |
| 2 | 372 | 318 | 420 | 248 | 274 | 468 | 711 | 240 | 389 | 249 | 300 | --- |
| 3 | 376 | 362 | 414 | 254 | 285 | 480 | 744 | 124 | 396 | 258 | 313 | --- |
| 4 | 380 | 364 | 408 | 260 | 290 | 488 | 763 | 186 | 402 | 264 | 326 | --- |
| 5 | 384 | 350 | 400 | 266 | 295 | 496 | 755 | 192 | 408 | 272 | 333 | --- |
| 6 | 388 | 348 | 390 | 270 | 304 | 501 | 764 | 201 | 414 | 281 | 341 | --- |
| 7 | 389 | 346 | 384 | 280 | 322 | 509 | 780 | 214 | 422 | 288 | 349 | --- |
| 8 | 390 | 356 | 374 | 290 | 285 | 519 | 779 | 230 | 428 | 296 | 352 | --- |
| 9 | 394 | 358 | 358 | 294 | 188 | 526 | 783 | 247 | 432 | 304 | 364 | --- |
| 10 | 398 | 362 | 346 | 295 | 161 | 533 | 782 | 308 | 439 | 312 | 369 | --- |
| 11 | 400 | 368 | 340 | 296 | 187 | 541 | 780 | 325 | 446 | 320 | 365 | --- |
| 12 | 402 | 372 | 338 | 300 | 196 | 544 | 770 | 346 | 453 | 329 | 364 | --- |
| 13 | 405 | 380 | 320 | 304 | 224 | 553 | 680 | 350 | 461 | 338 | --- | --- |
| 14 | 406 | 350 | 418 | 310 | 254 | 564 | 190 | 356 | 466 | 340 | --- | --- |
| 15 | 404 | 410 | 524 | 314 | 270 | 570 | 169 | 283 | 470 | 347 | --- | --- |
| 16 | 400 | 428 | 566 | 318 | 289 | 576 | 205 | 123 | 476 | 355 | --- | --- |
| 17 | 390 | 434 | 488 | 322 | 304 | 594 | 227 | 141 | 480 | 368 | --- | --- |
| 18 | 372 | 440 | 454 | 346 | 316 | 607 | 246 | 160 | 485 | 370 | --- | --- |
| 19 | 370 | 448 | 460 | 334 | 322 | 614 | 262 | 171 | 490 | 381 | --- | --- |
| 20 | 362 | 454 | 470 | 282 | 344 | 620 | 278 | 196 | 432 | 387 | --- | --- |
| 21 | 346 | 444 | 456 | 214 | 352 | 624 | 291 | 225 | 304 | 401 | --- | --- |
| 22 | 348 | 458 | 420 | 158 | 369 | 626 | 304 | 301 | 237 | 428 | --- | --- |
| 23 | 350 | 464 | 302 | 137 | 381 | 628 | 316 | 264 | 350 | 448 | --- | --- |
| 24 | 352 | 480 | 188 | 136 | 390 | 629 | 327 | 286 | 203 | 454 | --- | --- |
| 25 | 356 | 490 | 153 | 154 | 399 | 630 | 334 | 303 | 176 | --- | --- | --- |
| 26 | 345 | 492 | 175 | 162 | 410 | 631 | 331 | 318 | 177 | --- | --- | --- |
| 27 | 350 | 480 | 190 | 183 | 422 | 632 | 372 | 330 | 190 | --- | --- | --- |
| 28 | 358 | 466 | 199 | 197 | 430 | 615 | 241 | 340 | 204 | 332 | --- | --- |
| 29 | 360 | 436 | 208 | 210 | 447 | 608 | 245 | 350 | 214 | 152 | --- | 225 |
| 30 | 368 | 414 | 222 | 236 | --- | 830 | 259 | 359 | 225 | 202 | --- | 186 |
| 31 | 354 | --- | 232 | 290 | --- | 702 | --- | 365 | --- | 251 | --- | --- |
| MEAN | 375 | 409 | 356 | 255 | 309 | 578 | 480 | 262 | 368 | 320 | 338 | 206 |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22.0 | 15.0 | 4.0 | 7.0 | 2.0 | 10.0 | 15.0 | 19.0 | 26.0 | 29.0 | 26.0 | --- |
| 2 | 20.0 | 14.0 | 4.0 | 7.0 | 3.0 | 5.0 | 16.0 | 20.0 | 26.0 | 29.0 | 26.0 | --- |
| 3 | 20.0 | 12.0 | 3.0 | 8.0 | 3.0 | 5.0 | 18.0 | 18.0 | 26.0 | 28.0 | 27.0 | --- |
| 4 | 18.0 | 11.0 | 4.0 | 6.0 | 4.0 | 9.0 | 16.0 | 20.0 | 26.0 | 29.0 | 26.5 | --- |
| 5 | 16.0 | 12.0 | 6.0 | 5.0 | 5.0 | 10.0 | 16.0 | 20.0 | 26.0 | 28.0 | 26.0 | --- |
| 6 | 17.0 | 12.0 | 7.0 | 6.0 | 5.0 | 9.0 | 17.0 | 21.0 | 27.0 | 28.0 | 26.0 | --- |
| 7 | 17.0 | 10.0 | 6.0 | 6.0 | 6.0 | 13.0 | 18.0 | 20.0 | 27.0 | 28.0 | 26.0 | --- |
| 8 | 20.0 | 10.0 | 6.0 | 5.0 | 5.0 | 15.0 | 18.0 | 22.0 | 28.0 | 28.0 | 31.5 | --- |
| 9 | 21.0 | 13.0 | 6.0 | 4.0 | 4.0 | 13.0 | 17.0 | 19.0 | 24.0 | 28.0 | 25.5 | --- |
| 10 | 14.0 | 10.0 | 8.0 | 7.0 | 2.0 | 14.0 | 17.0 | 20.0 | 23.0 | 28.0 | 26.0 | --- |
| 11 | 15.0 | 9.0 | 11.0 | 8.0 | 2.0 | 15.0 | 19.0 | 22.0 | 23.0 | 27.0 | 25.5 | --- |
| 12 | 17.0 | 8.0 | 10.0 | 7.0 | 3.0 | 13.0 | 16.0 | 23.0 | 23.0 | 27.0 | 26.0 | --- |
| 13 | 18.0 | 8.0 | 8.0 | 6.0 | 5.0 | 14.0 | 13.0 | 23.0 | 24.0 | 28.0 | --- | --- |
| 14 | 16.0 | 7.0 | 7.0 | 7.0 | 6.0 | 13.0 | 9.0 | 22.0 | 24.0 | 26.0 | --- | --- |
| 15 | 16.0 | 7.0 | 7.0 | 10.0 | 9.0 | 13.0 | 10.0 | 22.0 | 25.0 | 25.0 | --- | --- |
| 16 | 17.0 | 8.0 | 6.0 | 11.0 | 8.0 | 16.0 | 12.0 | 19.0 | 26.0 | 27.0 | --- | --- |
| 17 | 19.0 | 9.0 | 3.0 | 10.0 | 6.0 | 15.0 | 16.0 | 21.0 | 26.0 | 25.5 | --- | --- |
| 18 | 19.0 | 11.0 | 2.0 | 9.0 | 6.0 | 12.0 | 16.0 | 23.0 | 26.0 | 26.0 | --- | --- |
| 19 | 20.0 | 14.0 | 3.0 | 10.0 | 8.0 | 13.0 | 17.0 | 23.0 | 26.0 | 26.5 | --- | --- |
| 20 | 21.0 | 16.0 | 6.0 | 12.0 | 9.0 | 15.0 | 18.0 | 21.0 | 26.0 | 26.0 | --- | --- |
| 21 | 22.0 | 18.0 | 9.0 | 11.0 | 12.0 | 13.0 | 18.0 | 22.0 | 24.0 | 26.0 | --- | --- |
| 22 | 21.0 | 13.0 | 11.0 | 10.0 | 12.0 | 14.0 | 19.0 | 21.0 | 25.0 | 26.5 | --- | --- |
| 23 | 17.0 | 9.0 | 15.0 | 7.0 | 13.0 | 16.0 | 20.0 | 21.0 | 25.0 | 25.0 | --- | --- |
| 24 | 15.0 | 9.0 | 11.0 | 7.0 | 12.0 | 13.0 | 21.0 | 22.0 | 26.0 | 25.0 | --- | --- |
| 25 | 15.0 | 9.0 | 10.0 | 9.0 | 10.0 | 13.0 | 21.0 | 23.0 | 27.0 | --- | --- | --- |
| 26 | 15.0 | 9.0 | 10.0 | 8.0 | 9.0 | 13.0 | 19.0 | 24.0 | 28.0 | --- | --- | --- |
| 27 | 16.0 | 11.0 | 10.0 | 7.0 | 10.0 | 15.0 | 17.0 | 25.0 | 28.0 | --- | --- | --- |
| 28 | 18.0 | 9.0 | 11.0 | 6.0 | 12.0 | 14.0 | 16.0 | 25.0 | 30.0 | 25.5 | --- | --- |
| 29 | 18.0 | 7.0 | 11.0 | 5.0 | 14.0 | 15.0 | 17.0 | 25.0 | 30.0 | 26.5 | --- | 16.0 |
| 30 | 19.0 | 5.0 | 10.0 | 4.0 | --- | 13.0 | 19.0 | 25.0 | 30.0 | 25.5 | --- | 17.0 |
| 31 | 16.0 | --- | 8.0 | 3.0 | --- | 13.0 | --- | 26.0 | --- | 26.0 | --- | --- |
| MEAN | 18.0 | 10.5 | 7.5 | 7.5 | 7.0 | 12.5 | 16.5 | 22.0 | 26.0 | 27.0 | 26.5 | 16.5 |

## 07343000 NORTH SULPHUR RIVER NEAR COOPER, TX

LOCATION.--Lat 33°28'29", long 95°35'15", Lamar County, Hydrologic Unit 11140301, on left bank at downstream side of highway embankment near left end of downstream bridge on State Highways 19 and 24, 2.3 mi (3.7 km) upstream from Auds Creek, 5.5 mi (8.8 km) upstream from Hickory Creek, 8.7 mi (14.0 km) northeast of Cooper, and 15.6 mi (25.1 km) upstream from mouth.

DRAINAGE AREA.--276 mi² (715 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1949 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 372.42 ft (113.51 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Nov. 8, 1949, nonrecording gage, Nov. 8, 1949, to May 21, 1960, water-stage recorder at site 50 ft (15 m) upstream at datum 9.00 ft (2.743 m) higher, and May 22, 1960, to Sept. 30, 1970, at datum 5.00 ft (1.524 m) higher.

REMARKS.--Water-discharge records good. In 1928-29, the channel was rectified for a distance of 28 mi (45 km) upstream and 18 mi (29 km) downstream from this station.

AVERAGE DISCHARGE.--31 years, 234 ft³/s (6.627 m³/s), 11.51 in/yr (292 mm/yr), 169,500 acre-ft/yr (209 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 90,600 ft³/s (2,570 m³/s) Oct. 19, 1971, gage height, 36.16 ft (11.022 m), from floodmarks; no flow at times most years.
Maximum stage since at least 1915, that of Oct. 19, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 2, 1944, reached a stage of 35.6 ft (10.85 m), present datum, and flood in 1932 reached about same stage, from information by Corps of Engineers and local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,400 ft³/s (464 m³/s) Sept. 29 at 0900 hours, gage height, 17.20 ft (5.243 m), from graph based on daily observations of stage, no peak above base of 20,000 ft³/s (566 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .13 | 27 | 1.0 | 4.5 | 11 | 12 | 12 | 4.8 | 2.6 | .00 | .00 | .00 |
| 2 | .05 | 11 | 1.6 | 3.8 | 9.0 | 9.0 | 10 | 7.2 | 1.8 | .00 | .00 | .00 |
| 3 | .00 | 5.6 | 1.6 | 3.8 | 6.8 | 11 | 9.0 | 13 | .80 | .00 | .00 | .00 |
| 4 | .00 | 3.5 | 1.0 | 3.2 | 5.2 | 11 | 7.2 | 6.8 | .40 | .00 | .00 | .00 |
| 5 | .00 | 2.6 | .80 | 2.4 | 4.8 | 9.5 | 6.8 | 4.8 | .13 | .00 | .00 | .00 |
| 6 | .00 | 2.6 | 1.0 | 2.6 | 3.8 | 9.0 | 6.8 | 3.5 | .08 | .00 | .00 | .00 |
| 7 | .00 | 2.4 | 1.3 | 2.1 | 2.9 | 9.0 | 7.7 | 2.4 | .03 | .00 | .00 | .00 |
| 8 | .00 | 2.1 | 1.6 | 1.3 | 1720 | 9.0 | 6.0 | 2.1 | .08 | .00 | .00 | .00 |
| 9 | .00 | 30 | 1.3 | 1.3 | 862 | 9.0 | 4.5 | 3.2 | .40 | .00 | .00 | .00 |
| 10 | .00 | 18 | 1.0 | 1.3 | 284 | 9.0 | 3.8 | 2.4 | .24 | .00 | .00 | .00 |
| 11 | .00 | 11 | 1.3 | 2.1 | 337 | 8.6 | 4.8 | 1.6 | .05 | .00 | .00 | .00 |
| 12 | .00 | 6.4 | 9.2 | 1.3 | 388 | 17 | 6.4 | 1.6 | .00 | .00 | .00 | .00 |
| 13 | .00 | 4.1 | 103 | 1.0 | 133 | 17 | 180 | 2.6 | .00 | .00 | .00 | .00 |
| 14 | .00 | 2.9 | 37 | .80 | 81 | 11 | 183 | 1.6 | .00 | .00 | .00 | .00 |
| 15 | .00 | 2.4 | 17 | 1.0 | 62 | 8.6 | 41 | 893 | .00 | .00 | .00 | .00 |
| 16 | .00 | 1.8 | 10 | 2.1 | 47 | 8.1 | 20 | 1830 | .00 | .00 | .00 | .00 |
| 17 | 8.1 | 1.6 | 6.0 | 2.9 | 30 | 8.6 | 14 | 72 | .00 | .00 | .00 | .00 |
| 18 | 9.5 | 1.6 | 4.5 | 2.0 | 32 | 6.4 | 11 | 18 | .00 | .00 | .00 | .00 |
| 19 | 5.2 | 2.1 | 4.5 | 7.5 | 29 | 6.4 | 9.5 | 144 | .00 | .00 | .00 | .00 |
| 20 | 2.9 | 2.1 | 4.8 | 55 | 25 | 6.8 | 9.0 | 22 | 5.2 | .00 | .00 | .00 |
| 21 | 1.8 | 5.6 | 4.8 | 144 | 22 | 5.2 | 7.7 | 337 | 7.7 | .00 | .00 | .00 |
| 22 | 4.8 | 5.2 | 180 | 1950 | 18 | 4.8 | 6.4 | 280 | 2.6 | .00 | .00 | .00 |
| 23 | 5.2 | 4.1 | 4420 | 114 | 16 | 6.0 | 6.0 | 42 | 4.1 | .00 | .00 | .00 |
| 24 | 3.5 | 2.9 | 790 | 32 | 15 | 6.4 | 6.4 | 16 | 1.8 | .00 | .00 | .00 |
| 25 | 2.4 | 2.4 | 76 | 15 | 14 | 5.2 | 8.6 | 10 | .58 | .00 | .00 | .00 |
| 26 | 1.6 | 1.8 | 28 | 9.5 | 12 | 5.6 | 17 | 6.8 | .00 | .00 | .00 | .00 |
| 27 | 1.3 | 1.0 | 16 | 6.8 | 12 | 7.7 | 14 | 4.5 | .00 | .00 | .00 | .00 |
| 28 | 1.0 | .40 | 11 | 5.6 | 13 | 25 | 9.0 | 3.8 | .00 | .00 | .00 | 345 |
| 29 | .58 | .58 | 8.1 | 22 | 12 | 29 | 6.4 | 16 | .00 | .00 | .00 | 8750 |
| 30 | 223 | .58 | 6.8 | 30 | --- | 31 | 4.8 | 7.2 | .00 | .00 | .00 | 282 |
| 31 | 180 | --- | 5.2 | 22 | --- | 18 | --- | 4.5 | --- | .00 | .00 | --- |
| TOTAL | 451.06 | 165.36 | 5755.40 | 2452.90 | 4207.5 | 339.9 | 638.8 | 3764.4 | 28.59 | .00 | .00 | 9377.00 |
| MEAN | 14.6 | 5.51 | 186 | 79.1 | 145 | 11.0 | 21.3 | 121 | .95 | .000 | .000 | 313 |
| MAX | 223 | 30 | 4420 | 1950 | 1720 | 31 | 183 | 1830 | 7.7 | .00 | .00 | 8750 |
| MIN | .00 | .40 | .80 | .80 | 2.9 | 4.8 | 3.8 | 1.6 | .00 | .00 | .00 | .00 |
| CFSM | .05 | .02 | .67 | .29 | .53 | .04 | .08 | .44 | .003 | .000 | .000 | 1.13 |
| IN. | .06 | .02 | .78 | .33 | .57 | .05 | .09 | .51 | .00 | .00 | .00 | 1.26 |
| AC-FT | 895 | 328 | 11420 | 4870 | 8350 | 674 | 1270 | 7470 | 57 | .00 | .00 | 18600 |

CAL YR 1979 TOTAL 91686.68 MEAN 251 MAX 13500 MIN .00 CFSM .91 IN 12.36 AC-FT 181900
WTR YR 1980 TOTAL 27180.91 MEAN 74.3 MAX 8750 MIN .00 CFSM .27 IN 3.66 AC-FT 53910

## 07343000 NORTH SULPHUR RIVER NEAR COOPER, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: 'October 1968 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,290 micromhos Sept. 17, 1969; minimum daily, 191 micromhos Oct. 12, Dec. 10, 1971.
WATER TEMPERATURES: Maximum daily, 39.0°C June 1, 1977; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,510 micromhos Oct. 23; minimum daily, 294 micromhos Sept. 29.
WATER TEMPERATURES: Maximum daily, 30.0°C June 6; minimum daily, 1.0°C Feb. 10, 11, 17, Mar. 2.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 22... | 0800 | 4.5 | 1430 | 19.0 | 390 | 300 | 130 | 17 | 150 |
| NOV 30... | 0830 | .95 | 1200 | 4.0 | 360 | 230 | 120 | 15 | 120 |
| DEC 31... | 0800 | 7.2 | 730 | 6.0 | 260 | 70 | 91 | 7.7 | 50 |
| JAN 19... | 0700 | .03 | 916 | 10.0 | 270 | 140 | 91 | 11 | 88 |
| APR 14... | 1700 | 111 | 685 | 16.0 | 230 | 120 | 80 | 8.2 | 47 |
| MAY 19... | 1700 | 95 | 360 | 27.5 | 130 | 31 | 46 | 3.6 | 18 |
| JUN 30... | 1400 | .79 | 1350 | 31.0 | 340 | 260 | 110 | 16 | 150 |

| DATE | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 22... | 3.3 | 4.6 | 110 | 0 | 430 | 130 | .4 | 3.2 | 919 |
| NOV 30... | 2.7 | 3.7 | 160 | 0 | 340 | 95 | .3 | 1.5 | 774 |
| DEC 31... | 1.4 | 3.3 | 230 | 0 | 150 | 31 | .3 | 7.8 | 454 |
| JAN 19... | 2.3 | 3.2 | 160 | 0 | 250 | 66 | .4 | 2.1 | 591 |
| APR 14... | 1.3 | 3.6 | 140 | 0 | 160 | 31 | .3 | 6.6 | 406 |
| MAY 19... | .7 | 3.9 | 120 | 0 | 49 | 10 | .4 | 8.0 | 198 |
| JUN 30... | 3.5 | 5.5 | 94 | 0 | 410 | 130 | .6 | 3.1 | 872 |

07343000 NORTH SULPHUR RIVER NEAR COOPER, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 451.06 | 563 | 342 | 416 | 34 | 41 | 120 | 149 | 180 |
| NOV. | 1979 | 165.36 | 800 | 491 | 219 | 52 | 23 | 180 | 80 | 260 |
| DEC. | 1979 | 5755.40 | 362 | 215 | 3350 | 17 | 266 | 73 | 1130 | 120 |
| JAN. | 1980 | 2452.90 | 435 | 260 | 1720 | 21 | 141 | 88 | 585 | 150 |
| FEB. | 1980 | 4207.5 | 388 | 231 | 2620 | 19 | 211 | 78 | 889 | 130 |
| MAR. | 1980 | 339.9 | 952 | 590 | 541 | 68 | 62 | 220 | 202 | 300 |
| APR. | 1980 | 638.8 | 787 | 483 | 832 | 51 | 88 | 180 | 304 | 250 |
| MAY | 1980 | 3764.4 | 473 | 284 | 2880 | 24 | 247 | 98 | 992 | 160 |
| JUNE | 1980 | 28.59 | 1230 | 782 | 60 | 100 | 8.1 | 310 | 24 | 370 |
| JULY | 1980 | 0.00 | * | * | 0.00 | * | 0.00 | * | 0.00 | * |
| AUG. | 1980 | 0.00 | * | * | 0.00 | * | 0.00 | * | 0.00 | * |
| SEPT | 1980 | 9377.00 | 332 | 198 | 5010 | 16 | 403 | 67 | 1700 | 110 |
| TOTAL | | 27180.91 | ** | ** | 17700 | ** | 1490 | ** | 6050 | ** |
| WTD. AVG. | | 74 | 402 | 241 | ** | 20 | ** | 82 | ** | 130 |

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1060 | 654 | 1210 | 750 | 674 | 834 | 1070 | 1060 | 766 | | | --- |
| 2 | 1070 | 734 | 1230 | 794 | 753 | 870 | 1090 | 1070 | 854 | | | --- |
| 3 | --- | 754 | 1250 | 830 | 781 | 898 | 1100 | 1100 | 922 | | | --- |
| 4 | --- | 806 | 1290 | 838 | 816 | 914 | 1110 | 1120 | 986 | | | --- |
| 5 | --- | 856 | 1310 | 854 | 827 | 943 | 1120 | 1140 | 1040 | | | --- |
| 6 | --- | 914 | 1320 | 868 | 826 | 937 | 1110 | 1200 | 1080 | | | --- |
| 7 | --- | 956 | 1330 | 886 | 825 | 944 | 1120 | 1250 | 1090 | | | --- |
| 8 | --- | 996 | 1350 | 894 | 300 | 959 | 1130 | 1320 | 1180 | | | --- |
| 9 | --- | 600 | 1370 | 910 | 332 | 949 | 1140 | 1360 | 1240 | | | --- |
| 10 | --- | 732 | 1400 | 915 | 399 | 960 | 1160 | 1370 | 1280 | | | --- |
| 11 | --- | 828 | 1420 | 918 | 458 | 973 | 1170 | 1410 | 1230 | | | --- |
| 12 | --- | 872 | 1300 | 908 | 420 | 965 | 1220 | 1440 | --- | | | --- |
| 13 | --- | 882 | 680 | 915 | 453 | 929 | 700 | 1460 | --- | | | --- |
| 14 | --- | 906 | 906 | 922 | 539 | 905 | 639 | 1440 | --- | | | --- |
| 15 | --- | 920 | 1090 | 938 | 601 | 926 | 769 | 600 | --- | | | --- |
| 16 | --- | 942 | 1080 | 925 | 653 | 974 | 805 | 443 | --- | | | --- |
| 17 | 1360 | 968 | 1120 | 918 | 689 | 1010 | 833 | 461 | --- | | | --- |
| 18 | 1250 | 998 | 1100 | 916 | 745 | 1030 | 842 | 550 | --- | | | --- |
| 19 | 1310 | 1060 | 1100 | 875 | 767 | 1020 | 838 | 413 | --- | | | --- |
| 20 | 1420 | 1070 | 1070 | 576 | 782 | 1040 | 853 | 460 | 1490 | | | --- |
| 21 | 1440 | 1050 | 1100 | 544 | 786 | 1060 | 888 | 300 | 1300 | | | --- |
| 22 | 1430 | 1080 | 774 | 406 | 773 | 1080 | 902 | 325 | 1230 | | | --- |
| 23 | 1510 | 1100 | 328 | 358 | 776 | 1100 | 936 | 451 | 1310 | | | --- |
| 24 | 1420 | 1110 | 298 | 436 | 778 | 1110 | 969 | 545 | 1300 | | | --- |
| 25 | 1400 | 1110 | 378 | 530 | 788 | 1120 | 988 | 565 | 1280 | | | --- |
| 26 | 1390 | 1120 | 474 | 602 | 802 | 1110 | 942 | 583 | --- | | | --- |
| 27 | 1400 | 1100 | 530 | 662 | 824 | 1120 | 864 | 655 | --- | | | --- |
| 28 | 1410 | 1130 | 594 | 710 | 848 | 950 | 928 | 729 | --- | | | 1250 |
| 29 | 1420 | 1180 | 644 | 675 | 849 | 917 | 971 | 700 | --- | | | 294 |
| 30 | 500 | 1200 | 688 | 664 | --- | 852 | 1020 | 705 | --- | | | 394 |
| 31 | 424 | --- | 730 | 632 | --- | 950 | --- | 707 | --- | | | --- |
| MEAN | 1250 | 954 | 983 | 760 | 685 | 979 | 974 | 869 | 1150 | | | 646 |

## 07343000 NORTH SULPHUR RIVER NEAR COOPER, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24.0 | 12.0 | 4.0 | --- | 2.0 | 8.0 | 15.0 | 20.0 | 26.0 | | | --- |
| 2 | 26.0 | 14.0 | 4.0 | 6.0 | 2.0 | 1.0 | 17.0 | 21.0 | 25.0 | | | --- |
| 3 | --- | 12.0 | 5.0 | 8.0 | 4.0 | 4.0 | 17.0 | 20.0 | 25.0 | | | --- |
| 4 | --- | 11.0 | 5.0 | 5.0 | 4.0 | 9.0 | 15.0 | 21.0 | 25.0 | | | --- |
| 5 | --- | 12.0 | 7.0 | 3.0 | 6.0 | 4.0 | 15.0 | 22.0 | 25.0 | | | --- |
| 6 | --- | 11.0 | 8.0 | 6.0 | 7.0 | 8.0 | 19.0 | 22.0 | 30.0 | | | --- |
| 7 | --- | 10.0 | --- | 5.0 | 6.0 | 15.0 | 18.0 | 23.0 | 26.0 | | | --- |
| 8 | --- | 11.0 | 8.0 | 4.0 | 4.0 | 16.0 | 15.0 | 24.0 | 28.0 | | | --- |
| 9 | --- | 14.0 | 7.0 | 8.0 | 4.0 | 14.0 | 14.0 | 18.0 | 23.0 | | | --- |
| 10 | --- | 10.0 | 9.0 | 10.0 | 1.0 | 15.0 | 14.0 | 19.0 | 23.0 | | | --- |
| 11 | --- | 9.0 | 14.0 | 10.0 | 1.0 | 14.0 | 17.0 | 22.0 | 24.0 | | | --- |
| 12 | --- | 9.0 | 8.0 | 8.0 | 4.0 | 10.0 | 14.0 | 23.0 | --- | | | --- |
| 13 | --- | 8.0 | 5.0 | --- | 5.0 | 13.0 | 10.0 | 24.0 | --- | | | --- |
| 14 | --- | 8.0 | 8.0 | 7.0 | 8.0 | 8.0 | 7.0 | 20.0 | --- | | | --- |
| 15 | --- | 9.0 | 6.0 | 10.0 | 12.0 | 10.0 | 10.0 | 20.0 | --- | | | --- |
| 16 | --- | 9.0 | 7.0 | 14.0 | 7.0 | 15.0 | 15.0 | 18.0 | --- | | | --- |
| 17 | 21.0 | 10.0 | 3.0 | 11.0 | 1.0 | 14.0 | 17.0 | 22.0 | --- | | | --- |
| 18 | 20.0 | 14.0 | 4.0 | 9.0 | 5.0 | 14.0 | 15.0 | 24.0 | --- | | | --- |
| 19 | 21.0 | 14.0 | 5.0 | 10.0 | 9.0 | 15.0 | 16.0 | 19.0 | --- | | | --- |
| 20 | 22.0 | --- | 8.0 | 12.0 | 12.0 | 20.0 | 18.0 | 22.0 | 25.0 | | | --- |
| 21 | 23.0 | --- | 11.0 | 9.0 | 15.0 | 12.0 | 21.0 | 22.0 | 25.0 | | | --- |
| 22 | 19.0 | --- | 15.0 | 9.0 | 14.0 | 15.0 | 20.0 | 18.0 | 28.0 | | | --- |
| 23 | 15.0 | --- | 12.0 | 6.0 | 18.0 | 9.0 | 22.0 | 20.0 | 25.0 | | | --- |
| 24 | 15.0 | 10.0 | 10.0 | 6.0 | 12.0 | 12.0 | 22.0 | 22.0 | 27.0 | | | --- |
| 25 | 17.0 | 9.0 | 9.0 | 8.0 | 9.0 | 12.0 | 20.0 | --- | 27.0 | | | --- |
| 26 | 15.0 | 9.0 | 12.0 | 9.0 | 6.0 | 14.0 | 16.0 | 25.0 | --- | | | --- |
| 27 | 17.0 | 12.0 | 11.0 | 5.0 | 7.0 | 14.0 | 14.0 | 27.0 | --- | | | --- |
| 28 | 20.0 | 8.0 | 11.0 | 4.0 | 12.0 | 12.0 | 25.0 | 26.0 | --- | | | 15.0 |
| 29 | 20.0 | 6.0 | 11.0 | 4.0 | 14.0 | 15.0 | 27.0 | 24.0 | --- | | | 16.0 |
| 30 | 20.0 | 4.0 | 9.0 | 3.0 | --- | 16.0 | 25.0 | 24.0 | --- | | | 22.0 |
| 31 | 13.0 | --- | 6.0 | 2.0 | --- | 12.0 | --- | 25.0 | --- | | | --- |
| MEAN | 19.5 | 10.0 | 8.0 | 7.5 | 7.5 | 12.0 | 17.0 | 22.0 | 25.5 | | | 17.5 |

## 07343200 SULPHUR RIVER NEAR TALCO, TX

LOCATION.--Lat 33°23'10", long 95°07'56", Franklin County, Hydrologic Unit 11140302, on downstream side of highway embankment near right end of bridge on U.S. Highway 271, 2.2 mi (3.5 km) northwest of Talco, 3.2 mi (5.1 km) downstream from Mustang Creek, and 162 mi (261 km) upstream from mouth.

DRAINAGE AREA.--1,365 mi$^2$ (3,535 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1956 to current year.

REVISED RECORDS.--WDR TX-76-1(P).

GAGE.--Water-stage recorder. Datum of gage is 290.82 ft (88.642 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good except those below 1.0 ft$^3$/s (0.028 m$^3$/s), which are fair. River Crest Electric Generating Plant diverted 55 acre-ft (67,800 m$^3$) for cooling purposes upstream from this station during the current year. Flow is affected at times by discharge from flood-detention pools of 14 floodwater-retarding structures with a combined detention capacity of 8,210 acre-ft (10.1 hm$^3$). These structures control runoff from 23.4 mi$^2$ (60.6 km$^2$) in the Auds and Deport Creek drainage basins.

AVERAGE DISCHARGE.--24 years, 1,416 ft$^3$/s (40.10 m$^3$/s), 14.09 in/yr (358 mm/yr), 1,026,000 acre-ft/yr (1.27 km$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 77,000 ft$^3$/s (2,180 m$^3$/s) Dec. 11, 1971, gage height, 29.40 ft (8.961 m), from floodmark; no flow at times in 1957, 1964-65, 1970, and 1979-80.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in 1908 and 1914 each reached a stage of 27.5 ft (8.38 m), and flood in 1945 reached a stage of 26.5 ft (8.08 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 15,000 ft$^3$/s (425 m$^3$/s) and maximum (*):

| Date | Time | Discharge | | Gage height | | Date | Time | Discharge | | Gage height | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (ft$^3$/s) | (m$^3$/s) | (ft) | (m) | | | (ft$^3$/s) | (m$^3$/s) | (ft) | (m) |
| Dec. 24 | 2200 | *18,000 | 510 | 23.28 | 7.096 | Feb. 9 | 1830 | 16,300 | 462 | 23.04 | 7.023 |
| Jan. 23 | 1300 | 16,500 | 467 | 23.08 | 7.035 | May 17 | 1400 | 16,100 | 456 | 23.02 | 7.016 |

Minimum discharge, 0.04 ft$^3$/s (0.001 m$^3$/s) Sept. 4-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.4 | 292 | 6.7 | 113 | 427 | 38 | 152 | 94 | 39 | 8.3 | .66 | .05 |
| 2 | 4.7 | 158 | 6.4 | 84 | 315 | 36 | 99 | 66 | 28 | 4.0 | .22 | .04 |
| 3 | 4.0 | 111 | 6.0 | 68 | 237 | 34 | 67 | 171 | 16 | 3.8 | .08 | .04 |
| 4 | 3.2 | 63 | 5.3 | 56 | 182 | 30 | 48 | 1310 | 9.6 | 3.4 | .06 | .04 |
| 5 | 2.7 | 39 | 5.0 | 48 | 147 | 29 | 36 | 770 | 7.5 | 1.7 | .06 | .04 |
| 6 | 2.4 | 26 | 4.7 | 43 | 127 | 29 | 27 | 248 | 3.8 | .85 | .06 | .04 |
| 7 | 1.9 | 16 | 4.6 | 38 | 109 | 27 | 20 | 123 | 3.1 | .56 | .05 | .04 |
| 8 | 1.3 | 11 | 4.6 | 35 | 740 | 24 | 15 | 84 | 3.8 | .38 | .05 | .04 |
| 9 | 1.3 | 9.8 | 4.2 | 31 | 11600 | 21 | 12 | 63 | 31 | .28 | .06 | .04 |
| 10 | 1.1 | 8.8 | 5.2 | 29 | 13600 | 22 | 11 | 55 | 185 | .23 | .06 | .04 |
| 11 | 1.3 | 33 | 8.6 | 27 | 9680 | 22 | 8.6 | 43 | 141 | .19 | .05 | .04 |
| 12 | 1.4 | 36 | 26 | 27 | 7870 | 22 | 7.3 | 33 | 48 | .21 | .05 | .04 |
| 13 | 1.1 | 24 | 49 | 27 | 4120 | 21 | 326 | 25 | 17 | .26 | .06 | .05 |
| 14 | .88 | 14 | 248 | 24 | 1140 | 32 | 6140 | 19 | 6.9 | .27 | .07 | .04 |
| 15 | .82 | 9.5 | 223 | 22 | 552 | 36 | 9960 | 21 | 3.4 | .29 | .07 | .04 |
| 16 | .82 | 7.0 | 145 | 21 | 370 | 31 | 4980 | 3820 | 1.4 | .33 | .06 | .05 |
| 17 | .97 | 6.1 | 98 | 20 | 269 | 24 | 1150 | 14900 | .77 | .35 | .06 | .06 |
| 18 | 1.1 | 6.8 | 61 | 20 | 204 | 20 | 382 | 13500 | .58 | .35 | .06 | .08 |
| 19 | 1.3 | 7.4 | 41 | 20 | 169 | 20 | 196 | 10200 | .72 | .36 | .06 | .11 |
| 20 | 2.5 | 7.4 | 32 | 284 | 143 | 18 | 127 | 6470 | 3.0 | .30 | .06 | .10 |
| 21 | 4.1 | 11 | 24 | 2050 | 123 | 16 | 88 | 1220 | 485 | .24 | .05 | .10 |
| 22 | 5.3 | 12 | 776 | 6160 | 104 | 16 | 69 | 1740 | 862 | .34 | .05 | .09 |
| 23 | 5.8 | 11 | 3280 | 14900 | 86 | 15 | 55 | 1510 | 576 | .38 | .05 | .09 |
| 24 | 5.8 | 11 | 12200 | 13800 | 73 | 13 | 44 | 487 | 380 | .41 | .05 | .09 |
| 25 | 6.9 | 11 | 15200 | 11800 | 62 | 11 | 39 | 230 | 310 | .39 | .05 | .09 |
| 26 | 6.6 | 11 | 9710 | 8930 | 54 | 11 | 75 | 147 | 169 | .40 | .04 | .10 |
| 27 | 6.7 | 10 | 5630 | 2550 | 48 | 12 | 141 | 100 | 80 | .36 | .04 | .13 |
| 28 | 6.4 | 9.1 | 1410 | 451 | 44 | 16 | 361 | 67 | 41 | .61 | .04 | .43 |
| 29 | 5.6 | 8.3 | 412 | 346 | 41 | 65 | 247 | 46 | 30 | 1.3 | .07 | 909 |
| 30 | 5.8 | 7.3 | 260 | 376 | --- | 143 | 140 | 39 | 20 | 1.4 | .09 | 8200 |
| 31 | 148 | --- | 160 | 503 | --- | 249 | --- | 42 | --- | 1.2 | .05 | --- |
| TOTAL | 247.19 | 987.5 | 50046.3 | 62903 | 52636 | 1103 | 25022.9 | 57643 | 3502.57 | 33.44 | 2.54 | 9111.14 |
| MEAN | 7.97 | 32.9 | 1614 | 2029 | 1815 | 35.6 | 834 | 1859 | 117 | 1.08 | .082 | 304 |
| MAX | 148 | 292 | 15200 | 14900 | 13600 | 249 | 9960 | 14900 | 862 | 8.3 | .66 | 8200 |
| MIN | .82 | 6.1 | 4.2 | 20 | 41 | 11 | 7.3 | 19 | .58 | .19 | .04 | .04 |
| CFSM | .006 | .02 | 1.18 | 1.49 | 1.33 | .03 | .61 | 1.36 | .09 | .001 | .000 | .22 |
| IN. | .01 | .03 | 1.36 | 1.71 | 1.43 | .03 | .68 | 1.57 | .10 | .00 | .00 | .25 |
| AC-FT | 490 | 1960 | 99270 | 124800 | 104400 | 2190 | 49630 | 114300 | 6950 | 66 | 5.0 | 18070 |

CAL YR 1979 TOTAL 704488.39 MEAN 1930 MAX 26800 MIN .82 AC-FT 1397000
WTR YR 1980 TOTAL 263238.58 MEAN 719 MAX 15200 MIN .04 AC-FT 522100

## 07343200 SULPHUR RIVER NEAR TALCO, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1966 to current year. Chemical and biochemical analyses: October 1967 to current year. Pesticide analyses: January 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
WATER TEMPERATURES: October 1966 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,800 micromhos Feb. 17, 1976; minimum daily, 100 micromhos Sept. 11, 1974.
WATER TEMPERATURES: Maximum daily, 38.0°C Aug. 15, 1975; minimum daily, 0.0°C on several days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,100 micromhos Mar. 26, 27; minimum daily, 161 micromhos Jan 25.
WATER TEMPERATURES: Maximum daily, 34.0°C July 10; minimum daily, 1.0°C Feb. 11.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | COLOR (PLATINUM COBALT UNITS) | TURBIDITY (NTU) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 31... | 0730 | 8.0 | 668 | -- | 15.0 | -- | -- | -- | -- | -- | 220 | 0 |
| NOV 13... | 1345 | 23 | 565 | 7.7 | 10.0 | 35 | 40 | 9.2 | 80 | 2.2 | 150 | 0 |
| DEC 27... | 0745 | 6590 | 199 | -- | 10.0 | -- | -- | -- | -- | -- | 76 | 0 |
| JAN 07... | 1650 | 36 | 460 | 7.6 | 3.0 | 50 | 37 | 9.8 | 72 | 2.0 | 170 | 26 |
| MAR 13... | 0930 | 19 | 900 | 7.7 | 14.0 | 20 | 15 | 8.6 | 83 | 1.5 | 310 | 110 |
| MAY 22... | 0935 | 1840 | 290 | 7.5 | 22.5 | 90 | 270 | 6.3 | 73 | 3.7 | 110 | 16 |
| JUL 10... | 1000 | .24 | 550 | 7.5 | 29.0 | 30 | 14 | 4.8 | 62 | 1.8 | 190 | 3 |
| AUG 22... | 1038 | .05 | 860 | 7.8 | 28.0 | 20 | 26 | 3.4 | 44 | 2.3 | 260 | 11 |
| SEP 30... | 0755 | 6720 | 266 | -- | 17.0 | -- | -- | -- | -- | -- | 99 | 17 |

| DATE | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 31... | 75 | 7.3 | 64 | 1.9 | 4.7 | 270 | 0 | 78 | 42 | .3 | 6.4 |
| NOV 13... | 53 | 4.9 | 58 | 2.0 | 5.1 | 190 | 0 | 76 | 33 | .3 | 9.0 |
| DEC 27... | 27 | 2.1 | 7.5 | .4 | 4.9 | 96 | 0 | 16 | 4.8 | .2 | 8.3 |
| JAN 07... | 58 | 4.9 | 26 | .9 | 5.0 | 170 | 0 | 69 | 17 | .3 | 9.1 |
| MAR 13... | 110 | 9.6 | 71 | 1.7 | 3.8 | 250 | 0 | 170 | 57 | .2 | 1.3 |
| MAY 22... | 37 | 3.4 | 15 | .6 | 4.6 | 110 | 0 | 31 | 9.1 | .2 | 9.7 |
| JUL 10... | 68 | 5.4 | 35 | 1.1 | 5.6 | 230 | 0 | 51 | 21 | .5 | 11 |
| AUG 22... | 88 | 9.1 | 73 | 2.0 | 5.7 | 300 | 0 | 120 | 48 | .3 | 8.8 |
| SEP 30... | 35 | 2.7 | 13 | .6 | 3.1 | 100 | 0 | 43 | 5.3 | .4 | 12 |

| DATE | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) | SOLIDS, VOLATILE, SUSPENDED (MG/L) | NITROGEN, NITRATE TOTAL (MG/L AS N) | NITROGEN, NITRITE TOTAL (MG/L AS N) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA TOTAL (MG/L AS N) | NITROGEN, ORGANIC TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 31... | 411 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| NOV 13... | 333 | 25 | 0 | 1.2 | .12 | 1.3 | .25 | 1.4 | 1.6 | 1.100 | 11 |
| DEC 27... | 118 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 07... | 273 | 52 | 30 | .51 | .02 | .53 | .04 | 1.8 | 1.8 | .610 | 8.7 |
| MAR 13... | 546 | 19 | 7 | .00 | .00 | .00 | .06 | 1.0 | 1.1 | .060 | 7.8 |
| MAY 22... | 164 | 812 | 53 | .90 | .04 | .94 | .12 | 2.1 | 2.2 | .610 | 29 |
| JUL 10... | 311 | 41 | 4 | .00 | .00 | .00 | .05 | .88 | .93 | .060 | 14 |
| AUG 22... | 501 | 152 | 137 | .00 | .01 | .00 | .00 | 1.1 | 1.1 | .090 | 11 |
| SEP 30... | 164 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

## 07343200 SULPHUR RIVER NEAR TALCO, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| JAN 07... | 1650 | 3 | 70 | <1 | 0 | 0 | 70 |
| MAR 13... | 0930 | 1 | 100 | <1 | 0 | 2 | <10 |
| MAY 22... | 0935 | 5 | 50 | 0 | 0 | 1 | 30 |
| JUL 10... | 1000 | 5 | 100 | 1 | 0 | 1 | <10 |

| DATE | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY DIS-SOLVED (UG/L AS HG) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| JAN 07... | 2 | 80 | .1 | 0 | 0 | 3 |
| MAR 13... | 0 | 90 | .0 | 1 | 0 | <3 |
| MAY 22... | 1 | 10 | .0 | 0 | 0 | 10 |
| JUL 10... | 0 | 170 | .0 | 0 | 1 | <3 |

| DATE | TIME | PCB, TOTAL (UG/L) | PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | CHLOR-DANE, TOTAL (UG/L) | CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOT-TOM MA-.TERIAL (UG/KG) | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MAR 13... | 0930 | .0 | 0 | .00 | .00 | .0 | .0 | 0 | .00 | 7.6 | .00 | 14 |
| JUL 10... | 1000 | .0 | 0 | .00 | .00 | .0 | .0 | 0 | .00 | <6.6 | .00 | <19 |

| DATE | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | DI-AZINON, TOTAL (UG/L) | DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | DI-ELDRIN TOTAL (UG/L) | DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | ENDO-SULFAN, TOTAL (UG/L) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | ETHION, TOTAL (UG/L) | ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | HEPTA-CHLOR, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MAR 13... | .00 | 5.5 | .00 | -- | .00 | .7 | .00 | .00 | .1 | .00 | -- | .00 |
| JUL 10... | .00 | <1.6 | .00 | .0 | .00 | 3.0 | .00 | .00 | .0 | .00 | .0 | .00 |

| DATE | HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | HEPTA-CHLOR EPOXIDE TOTAL (UG/L) | HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | MALA-THION, TOTAL (UG/L) | MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | METH-OXY-CHLOR, TOTAL (UG/L) | METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) | METHYL PARA-THION, TOTAL (UG/L) | METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG) | METHYL TRI-THION, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MAR 13... | .0 | .00 | .0 | .00 | .1 | .00 | -- | .00 | .0 | .00 | -- | .00 |
| JUL 10... | .0 | .00 | .0 | .00 | .0 | .00 | .0 | .00 | .7 | .00 | .0 | .00 |

| DATE | METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG) | MIREX, TOTAL (UG/L) | PARA-THION, TOTAL (UG/L) | PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | TOX-APHENE, TOTAL (UG/L) | TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | TOTAL TRI-THION (UG/L) | TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | 2,4-D, TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) | SILVEX, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MAR 13... | -- | .00 | .00 | -- | 0 | 0 | .00 | -- | .02 | .00 | .00 |
| JUL 10... | .0 | .00 | .00 | .0 | 0 | <10 | .00 | .0 | -- | -- | -- |

## 07343200 SULPHUR RIVER NEAR TALCO, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 247.19 | 633 | 374 | 249 | 34 | 23 | 86 | 57 | 220 |
| NOV. | 1979 | 987.5 | 602 | 355 | 948 | 33 | 87 | 82 | 219 | 210 |
| DEC. | 1979 | 50046.3 | 247 | 142 | 19200 | 7.9 | 1070 | 26 | 3530 | 92 |
| JAN. | 1980 | 62903 | 204 | 117 | 19900 | 5.8 | 979 | 20 | 3480 | 77 |
| FEB. | 1980 | 52636 | 241 | 138 | 19700 | 7.3 | 1040 | 25 | 3530 | 90 |
| MAR. | 1980 | 1103 | 838 | 502 | 1490 | 56 | 168 | 130 | 386 | 280 |
| APR. | 1980 | 25022.9 | 270 | 156 | 10500 | 9.0 | 611 | 29 | 1960 | 100 |
| MAY | 1980 | 57643 | 254 | 147 | 22800 | 8.3 | 1290 | 27 | 4210 | 95 |
| JUNE | 1980 | 3502.57 | 301 | 174 | 1640 | 10 | 98 | 33 | 310 | 110 |
| JULY | 1980 | 33.44 | 468 | 273 | 25 | 21 | 1.9 | 58 | 5.2 | 170 |
| AUG. | 1980 | 2.54 | 641 | 379 | 2.6 | 36 | 0.2 | 89 | 0.6 | 220 |
| SEPT | 1980 | 9111.14 | 314 | 182 | 4490 | 12 | 295 | 36 | 882 | 120 |
| TOTAL | | 263238.58 | ** | ** | 101000 | ** | 5670 | ** | 18600 | ** |
| WTD. AVG. | | 719 | 247 | 142 | ** | 8.0 | ** | 26 | ** | 92 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 538 | 816 | 818 | 310 | 345 | 674 | 608 | 463 | 449 | 381 | 513 | 891 |
| 2 | 500 | 474 | 816 | 338 | 346 | 692 | 450 | 427 | 465 | 402 | 529 | 795 |
| 3 | 514 | 432 | 822 | 360 | 347 | 706 | 541 | 350 | 480 | 404 | 551 | 828 |
| 4 | 490 | 422 | 832 | 382 | 371 | 721 | 606 | 200 | 506 | 416 | 550 | 788 |
| 5 | 516 | 426 | 842 | 410 | 385 | 739 | 669 | 189 | 514 | 433 | 562 | 893 |
| 6 | 540 | 416 | 852 | 430 | 421 | 742 | 688 | 253 | 519 | 448 | 577 | 918 |
| 7 | 500 | 422 | 858 | 454 | 452 | 765 | 715 | 277 | 519 | 464 | 575 | 916 |
| 8 | 504 | 454 | 860 | 472 | 415 | 786 | 723 | 296 | 492 | 484 | 544 | 919 |
| 9 | 574 | 480 | 860 | 492 | 272 | 804 | 725 | 319 | 498 | 513 | 584 | 847 |
| 10 | 518 | 510 | 860 | 508 | 216 | 828 | 732 | 334 | 449 | 525 | 577 | 933 |
| 11 | 514 | 504 | 854 | 534 | 188 | 844 | 754 | 356 | 358 | 540 | 592 | 938 |
| 12 | 580 | 452 | 650 | 550 | 212 | 816 | 768 | 378 | 281 | 565 | 608 | 926 |
| 13 | 630 | 550 | 484 | 562 | 248 | 858 | 704 | 406 | 323 | 580 | 619 | 935 |
| 14 | 552 | 604 | 784 | 582 | 261 | 878 | 345 | 430 | 354 | 602 | 596 | 942 |
| 15 | 556 | 612 | 802 | 610 | 272 | 921 | 215 | 443 | 370 | 608 | 677 | 943 |
| 16 | 542 | 602 | 444 | 626 | 292 | 930 | 197 | 599 | 393 | 622 | 710 | 944 |
| 17 | 646 | 602 | 438 | 642 | 316 | 982 | 239 | 254 | 411 | 641 | 736 | 933 |
| 18 | 580 | 618 | 458 | 666 | 358 | 971 | 265 | 197 | 431 | 610 | 760 | 936 |
| 19 | 652 | 652 | 432 | 692 | 399 | 949 | 286 | 202 | 465 | 668 | 782 | 940 |
| 20 | 616 | 700 | 582 | 550 | 421 | 1000 | 319 | 234 | 502 | 678 | 726 | 958 |
| 21 | 664 | 708 | 1040 | 258 | 457 | 988 | 346 | 271 | 350 | 696 | 791 | 966 |
| 22 | 586 | 726 | 646 | 248 | 493 | 984 | 372 | 293 | 272 | 702 | 816 | 960 |
| 23 | 616 | 738 | 238 | 232 | 531 | 1030 | 400 | 264 | 227 | 722 | 825 | 964 |
| 24 | 608 | 746 | 298 | 180 | 565 | 1060 | 427 | 271 | 217 | 727 | 839 | 970 |
| 25 | 578 | 742 | 216 | 161 | 593 | 1080 | 457 | 291 | 303 | 737 | 847 | 975 |
| 26 | 574 | 746 | 192 | 170 | 611 | 1100 | 380 | 311 | 295 | 722 | 843 | 978 |
| 27 | 560 | 756 | 199 | 189 | 640 | 1100 | 454 | 339 | 380 | 769 | 854 | 980 |
| 28 | 616 | 764 | 226 | 236 | 643 | 1070 | 459 | 375 | 409 | 781 | 857 | 962 |
| 29 | 682 | 772 | 246 | 252 | 664 | 962 | 361 | 394 | 391 | 541 | 865 | 750 |
| 30 | 640 | 788 | 254 | 272 | --- | 589 | 364 | 418 | 384 | 492 | 889 | 266 |
| 31 | 668 | --- | 280 | 342 | --- | 899 | --- | 425 | --- | 507 | 914 | --- |
| MEAN | 576 | 608 | 587 | 410 | 405 | 886 | 486 | 331 | 400 | 580 | 700 | 896 |

## 07343200 SULPHUR RIVER NEAR TALCO, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22.0 | 13.0 | 5.0 | 7.0 | 3.0 | 9.0 | 14.0 | 19.0 | 25.5 | 29.0 | 27.0 | 26.5 |
| 2 | 20.5 | 13.0 | 5.0 | 7.0 | 3.0 | 8.0 | 16.0 | 20.0 | 25.0 | 29.0 | 27.0 | 26.5 |
| 3 | 20.0 | 12.0 | 4.0 | 8.0 | 3.0 | 5.0 | 20.0 | 19.0 | 26.0 | 29.0 | 28.0 | 26.0 |
| 4 | 19.0 | 12.0 | 5.0 | 6.0 | 3.0 | 4.0 | 15.0 | 20.0 | 26.0 | 29.0 | 28.0 | 26.0 |
| 5 | 17.0 | 12.0 | 6.0 | 9.0 | 4.0 | 9.0 | 16.0 | 19.0 | 26.5 | 29.0 | 28.0 | 26.0 |
| 6 | 17.0 | 11.5 | 7.0 | 6.0 | 4.0 | 9.0 | 18.0 | 20.0 | 27.0 | 29.0 | 28.0 | 26.0 |
| 7 | 17.0 | 10.0 | 6.0 | 6.0 | 5.0 | 13.0 | 14.0 | 21.0 | 28.0 | 29.0 | 28.0 | 26.0 |
| 8 | 19.0 | 11.0 | 7.0 | 6.0 | 5.0 | 13.5 | 18.0 | 21.0 | 28.0 | 31.0 | 27.0 | 26.0 |
| 9 | 20.0 | 14.0 | 7.0 | 5.0 | 4.0 | 12.0 | 18.0 | 19.0 | 24.0 | 33.0 | 27.0 | 26.0 |
| 10 | 16.0 | 11.0 | 8.0 | 7.0 | 2.0 | 13.0 | 17.5 | 20.0 | 23.0 | 34.0 | 27.0 | 25.0 |
| 11 | 16.0 | 11.0 | 11.0 | 9.0 | 1.0 | 14.0 | 19.0 | 23.0 | 23.0 | 30.0 | 27.0 | 25.0 |
| 12 | 16.0 | 10.0 | 9.0 | 7.0 | 2.0 | 13.0 | 16.0 | 22.0 | 24.0 | 30.0 | 28.0 | 25.0 |
| 13 | 18.0 | 9.0 | 7.0 | 6.0 | 3.0 | 13.0 | 13.0 | 23.0 | 24.0 | 29.0 | 27.0 | 25.0 |
| 14 | 16.0 | 9.0 | 7.0 | 6.0 | 6.0 | 12.0 | 8.0 | 22.0 | 25.0 | 30.0 | 27.0 | 25.0 |
| 15 | 15.0 | 8.0 | 5.0 | 10.0 | 9.0 | 13.0 | 10.0 | 21.0 | 27.0 | 29.0 | 27.0 | 25.0 |
| 16 | 17.0 | 8.0 | 6.0 | 12.0 | 7.0 | 16.0 | 13.0 | 20.0 | 27.0 | 28.0 | 27.0 | 25.0 |
| 17 | 18.0 | 8.0 | 4.0 | 10.0 | 5.0 | 14.0 | 15.0 | 20.0 | 27.0 | 27.0 | 27.0 | 25.0 |
| 18 | 18.0 | 11.0 | 4.0 | 9.0 | 5.0 | 13.0 | 16.0 | 22.0 | 27.0 | 28.0 | 27.0 | 25.0 |
| 19 | 18.0 | 9.0 | 4.0 | 11.0 | 7.0 | 13.0 | 17.0 | 22.0 | 29.0 | 28.0 | 27.0 | 24.0 |
| 20 | 20.0 | 15.0 | 6.0 | 11.0 | 8.0 | 15.0 | 19.0 | 22.0 | 26.0 | 28.0 | 27.0 | 24.0 |
| 21 | 22.0 | 17.0 | 9.0 | 10.0 | 11.0 | 13.0 | 19.0 | 22.0 | 25.0 | 30.0 | 27.0 | 26.0 |
| 22 | 20.0 | 12.0 | 12.0 | 9.0 | 11.0 | 13.0 | 20.0 | 22.0 | 25.0 | 29.0 | 28.0 | 26.0 |
| 23 | 16.0 | 10.0 | 15.0 | 6.0 | 12.0 | 15.0 | 20.0 | 20.0 | 25.0 | 27.0 | 28.0 | 26.0 |
| 24 | 15.0 | 10.0 | 10.5 | 6.0 | 12.0 | 13.0 | 22.0 | 22.0 | 25.0 | 26.0 | 27.0 | 25.0 |
| 25 | 15.0 | 9.0 | 9.5 | 7.0 | 10.0 | 13.0 | 21.0 | 23.0 | 26.5 | 27.0 | 27.0 | 25.0 |
| 26 | 15.0 | 9.0 | 9.0 | 8.0 | 9.0 | 13.0 | 17.0 | 23.0 | 28.0 | 28.0 | 26.5 | 24.0 |
| 27 | 15.0 | 12.0 | 10.0 | 7.0 | 9.0 | 14.0 | 18.0 | 24.5 | 29.0 | 27.0 | 28.0 | 20.0 |
| 28 | 18.0 | 10.0 | 11.0 | 6.0 | 11.0 | 13.5 | 17.0 | 25.0 | 29.0 | 25.0 | 25.0 | 18.0 |
| 29 | 18.0 | 8.0 | 10.0 | 5.0 | 12.0 | 15.0 | 17.0 | 25.0 | 29.0 | 26.0 | 24.5 | 18.0 |
| 30 | 19.0 | 5.0 | 10.0 | 4.0 | --- | 13.0 | 17.0 | 25.0 | 29.0 | 27.0 | 24.0 | 17.0 |
| 31 | 15.0 | --- | 7.0 | 3.0 | --- | 12.0 | --- | 25.0 | --- | 27.0 | 25.0 | --- |
| MEAN | 17.5 | 10.5 | 7.5 | 7.5 | 6.5 | 12.0 | 16.5 | 21.5 | 26.5 | 28.5 | 27.0 | 24.5 |

## 07343460 LAKE SULPHUR SPRINGS NEAR SULPHUR SPRINGS, TX

PERIOD OF RECORD.--Chemical analyses: October 1975 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| MAR | | | | | | | | | |
| 13... | 1230 | 70 | 14.0 | 23 | 3 | 5.8 | 2.0 | 3.5 | .3 |
| JUL | | | | | | | | | |
| 10... | 1240 | 83 | 33.0 | 29 | 6 | 7.1 | 2.7 | 4.2 | .3 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| MAR | | | | | | | | |
| 13... | 3.7 | 24 | 0 | 9.8 | 3.9 | .1 | 6.5 | 47 |
| JUL | | | | | | | | |
| 10... | 4.5 | 28 | 0 | 16 | 3.9 | .2 | 25 | 77 |

## 07343500 WHITE OAK CREEK NEAR TALCO, TX

LOCATION.--Lat 33°19'20", long 95°05'33", Titus County, Hydrologic Unit 11140303, near center of main channel on downstream side of bridge on U.S. Highway 271, 0.8 mi (1.3 km) downstream from Lewis Creek, 2.4 mi (3.9 km) upstream from Ripley Creek, 2.7 mi (4.3 km) south of Talco, and 38.4 mi (61.8 km) upstream from mouth.

DRAINAGE AREA.--494 mi$^2$ (1,279 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1949 to current year.

REVISED RECORDS.--WSP 1711: Elevation of historical maximum.

GAGE.--Water-stage recorder. Datum of gage is 286.45 ft (87.310 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Several small diversions above station for municipal supply. Records furnished by the cities of Sulphur Springs and Mount Vernon show that during the year, 1,210 acre-ft (1.49 hm$^3$) and 1,130 acre-ft (1.39 hm$^3$), respectively, were discharged into tributaries above this station.

AVERAGE DISCHARGE.--30 years (water years 1951-80), 451 ft$^3$/s (12.77 m$^3$/s), 12.40 in/yr (315 mm/yr), 326,700 acre-ft/yr (403 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,000 ft$^3$/s (1,360 m$^3$/s) Dec. 11, 1971, gage height, 21.20 ft (6.462 m), from rating curve extended above 23,000 ft$^3$/s (651 m$^3$/s); no flow at times in 1954, 1956, 1964-65, 1969-73, 1976, and 1978-79.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, 22.9 ft (6.98 m) Mar. 31, 1945, from floodmarks and from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 34,600 ft$^3$/s (980 m$^3$/s) Jan. 24 at 0730 hours, gage height, 19.86 ft (6.053 m), no other peak above base of 9,000 ft$^3$/s (255 m$^3$/s); minimum, 0.13 ft$^3$/s (0.004 m$^3$/s) Sept. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.0 | 175 | 5.8 | 197 | 691 | 45 | 614 | 175 | 22 | 13 | 395 | 1.0 |
| 2 | 4.5 | 168 | 4.3 | 130 | 643 | 43 | 428 | 96 | 20 | 10 | 186 | .68 |
| 3 | 3.5 | 186 | 3.4 | 102 | 446 | 41 | 182 | 132 | 18 | 8.6 | 45 | .66 |
| 4 | 2.9 | 101 | 2.6 | 87 | 253 | 38 | 89 | 221 | 16 | 7.0 | 19 | .78 |
| 5 | 2.6 | 44 | 2.1 | 76 | 181 | 34 | 59 | 392 | 14 | 6.1 | 11 | .68 |
| 6 | 2.2 | 20 | 1.8 | 67 | 153 | 31 | 45 | 533 | 14 | 5.8 | 7.6 | .55 |
| 7 | 1.9 | 11 | 1.5 | 61 | 137 | 31 | 36 | 551 | 13 | 5.1 | 5.8 | .41 |
| 8 | 1.5 | 7.0 | 1.4 | 52 | 435 | 33 | 30 | 338 | 26 | 4.6 | 5.1 | .29 |
| 9 | 1.3 | 5.5 | 1.5 | 46 | 1550 | 32 | 26 | 252 | 112 | 4.4 | 4.1 | .27 |
| 10 | 1.1 | 6.2 | 1.9 | 45 | 2620 | 29 | 23 | 210 | 47 | 4.3 | 3.3 | .32 |
| 11 | .94 | 43 | 2.2 | 46 | 4070 | 30 | 25 | 164 | 18 | 4.1 | 2.8 | .37 |
| 12 | .82 | 144 | 25 | 42 | 4110 | 35 | 34 | 143 | 13 | 3.9 | 2.5 | .35 |
| 13 | .65 | 122 | 483 | 39 | 2980 | 37 | 235 | 118 | 11 | 3.4 | 2.1 | .30 |
| 14 | .43 | 56 | 746 | 39 | 2020 | 45 | 1450 | 122 | 9.7 | 2.4 | 1.7 | .24 |
| 15 | .33 | 26 | 802 | 40 | 1230 | 61 | 2680 | 181 | 8.6 | 1.6 | 1.4 | .21 |
| 16 | .31 | 14 | 753 | 38 | 608 | 63 | 5010 | 512 | 8.1 | 1.0 | 1.1 | .16 |
| 17 | 1.1 | 8.8 | 723 | 34 | 319 | 47 | 4190 | 888 | 7.5 | .71 | .86 | .17 |
| 18 | 2.8 | 6.4 | 459 | 35 | 229 | 34 | 2770 | 1330 | 7.2 | .56 | .72 | 1.1 |
| 19 | 1.6 | 4.7 | 163 | 44 | 185 | 30 | 1690 | 2570 | 6.8 | .45 | .62 | 5.0 |
| 20 | .98 | 3.6 | 73 | 120 | 152 | 32 | 646 | 6430 | 23 | .34 | .52 | 4.7 |
| 21 | .64 | 24 | 47 | 1430 | 130 | 31 | 226 | 5220 | 95 | .30 | .48 | 4.9 |
| 22 | 8.5 | 71 | 270 | 9920 | 118 | 28 | 132 | 3940 | 265 | .76 | .48 | 3.0 |
| 23 | 16 | 70 | 1050 | 27600 | 106 | 24 | 94 | 2230 | 443 | 1.4 | .34 | 2.0 |
| 24 | 11 | 106 | 2430 | 31700 | 92 | 22 | 77 | 993 | 564 | 1.3 | .30 | 6.4 |
| 25 | 6.7 | 120 | 5350 | 16000 | 80 | 21 | 81 | 344 | 667 | 1.2 | .27 | 10 |
| 26 | 4.1 | 70 | 5290 | 5940 | 69 | 21 | 235 | 129 | 535 | 3.8 | .23 | 7.7 |
| 27 | 2.4 | 37 | 4640 | 2670 | 60 | 21 | 374 | 68 | 194 | 16 | .20 | 6.4 |
| 28 | 1.9 | 21 | 3360 | 1530 | 54 | 28 | 480 | 47 | 56 | 13 | .20 | 16 |
| 29 | 1.4 | 13 | 2230 | 682 | 48 | 82 | 442 | 36 | 28 | 9.8 | .21 | 101 |
| 30 | 1.9 | 8.3 | 1270 | 475 | --- | 404 | 300 | 29 | 19 | 141 | .23 | 235 |
| 31 | 99 | --- | 472 | 607 | --- | 602 | --- | 25 | --- | 341 | .87 | --- |
| TOTAL | 191.00 | 1692.5 | 30664.5 | 99894 | 23769 | 2055 | 22703 | 28419 | 3280.9 | 616.92 | 700.03 | 410.64 |
| MEAN | 6.16 | 56.4 | 989 | 3222 | 820 | 66.3 | 757 | 917 | 109 | 19.9 | 22.6 | 13.7 |
| MAX | 99 | 186 | 5350 | 31700 | 4110 | 602 | 5010 | 6430 | 667 | 341 | 395 | 235 |
| MIN | .31 | 3.6 | 1.4 | 34 | 48 | 21 | 23 | 25 | 6.8 | .30 | .20 | .16 |
| CFSM | .01 | .11 | 2.00 | 6.52 | 1.66 | .13 | 1.53 | 1.86 | .22 | .04 | .05 | .03 |
| IN. | .01 | .13 | 2.31 | 7.52 | 1.79 | .15 | 1.71 | 2.14 | .25 | .05 | .05 | .03 |
| AC-FT | 379 | 3360 | 60820 | 198100 | 47150 | 4080 | 45030 | 56370 | 6510 | 1220 | 1390 | 815 |

CAL YR 1979 TOTAL 206765.04 MEAN 566 MAX 13200 MIN .17 AC-FT 410100
WTR YR 1980 TOTAL 214396.49 MEAN 586 MAX 31700 MIN .16 AC-FT 425300

## 07343500 WHITE OAK CREEK NEAR TALCO, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,220 micromhos June 15, 1972; minimum daily, 33 micromhos May 16, 1969.
WATER TEMPERATURES: Maximum daily, 37.0°C July 18, Aug. 3, 15, 1975; minimum daily, 0.0°C on several days during January 1968, 1970, and 1978.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 688 micromhos Mar 16; minimum daily, 75 micromhos Jan. 24.
WATER TEMPERATURES: Maximum daily, 36.0°C July 10; minimum daily, 1.0°C Feb. 11.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|
| NOV<br>04... | 0840 | 108 | 230 | 13.0 | 53 | 13 | 13 | 4.9 | 18 |
| DEC<br>26... | 0815 | 5220 | 92 | 9.0 | 25 | 5 | 5.9 | 2.6 | 5.6 |
| JAN<br>18... | 0810 | 33 | 412 | 10.0 | 96 | 51 | 22 | 10 | 38 |
| MAR<br>31... | 0750 | 581 | 365 | 12.0 | 83 | 50 | 19 | 8.6 | 39 |
| APR<br>16... | 1725 | 5220 | 89 | 16.5 | 24 | 9 | 5.9 | 2,3 | 5.6 |
| MAY<br>07... | 0815 | 582 | 152 | 21.0 | 39 | 11 | 9.4 | 3.7 | 12 |
| JUN<br>18... | 0745 | 3.8 | 574 | 27.0 | 140 | 65 | 34 | 14 | 67 |
| JUL<br>31... | 0800 | 323 | 65 | 25.0 | 18 | 2 | 4.3 | 1.8 | 4.3 |
| AUG<br>22... | 0735 | .48 | 225 | 28.0 | 64 | 8 | 15 | 6.4 | 18 |

| DATE | SODIUM AD-SORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| NOV<br>04... | 1.1 | 10 | 48 | 0 | 33 | 21 | .2 | 9.8 | 134 |
| DEC<br>26... | .5 | 6.5 | 25 | 0 | 14 | 7.0 | .1 | 7.3 | 61 |
| JAN<br>18... | 1.7 | 6.6 | 55 | 0 | 81 | 40 | .2 | 12 | 237 |
| MAR<br>31... | 1.9 | 5.8 | 40 | 0 | 91 | 39 | .2 | 7.6 | 230 |
| APR<br>16... | .5 | 4.0 | 18 | 0 | 14 | 7.2 | .1 | 5.3 | 53 |
| MAY<br>07... | .8 | 5.6 | 34 | 0 | 23 | 12 | .1 | 7.9 | 90 |
| JUN<br>18... | 2.4 | 7.6 | 94 | 0 | 110 | 64 | .4 | 13 | 356 |
| JUL<br>31... | .4 | 5.2 | 20 | 0 | 11 | 4.9 | .1 | 6.9 | 48 |
| AUG<br>22... | 1.0 | 7.3 | 68 | 0 | 28 | 19 | .2 | 11 | 138 |

## 07343500 WHITE OAK CREEK NEAR TALCO, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 191.00 | 249 | 153 | 79 | 23 | 12 | 38 | 19 | 61 |
| NOV. | 1979 | 1692.5 | 225 | 137 | 627 | 20 | 92 | 35 | 158 | 57 |
| DEC. | 1979 | 30664.5 | 103 | 62 | 5130 | 6.9 | 573 | 17 | 1430 | 29 |
| JAN. | 1980 | 99894 | 88 | 53 | 14200 | 5.7 | 1540 | 15 | 3980 | 25 |
| FEB. | 1980 | 23769 | 131 | 79 | 5090 | 10 | 643 | 21 | 1360 | 35 |
| MAR. | 1980 | 2055 | 503 | 319 | 1770 | 73 | 404 | 61 | 340 | 93 |
| APR. | 1980 | 22703 | 134 | 82 | 5000 | 11 | 653 | 22 | 1320 | 36 |
| MAY | 1980 | 28419 | 116 | 70 | 5350 | 8.2 | 628 | 19 | 1470 | 32 |
| JUNE | 1980 | 3280.9 | 207 | 127 | 1130 | 20 | 178 | 31 | 275 | 50 |
| JULY | 1980 | 616.92 | 215 | 132 | 219 | 21 | 34 | 32 | 54 | 52 |
| AUG. | 1980 | 700.03 | 108 | 65 | 122 | 7.2 | 14 | 18 | 34 | 30 |
| SEPT | 1980 | 410.64 | 389 | 244 | 270 | 48 | 53 | 52 | 58 | 82 |
| TOTAL | | 214396.49 | ** | ** | 39000 | ** | 4830 | ** | 10500 | ** |
| WTD. AVG. | | 586 | 111 | 67 | ** | 8.3 | ** | 18 | ** | 30 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 194 | 146 | 266 | 180 | 224 | 402 | 258 | 224 | 373 | 204 | 102 | 247 |
| 2 | 198 | 234 | 270 | 204 | 206 | 416 | 242 | 218 | 397 | 214 | 95 | 250 |
| 3 | 200 | 292 | 273 | 232 | 208 | 429 | 252 | 230 | 428 | 224 | 123 | 253 |
| 4 | 202 | 230 | 275 | 252 | 221 | 441 | 264 | 220 | 453 | 234 | 132 | 255 |
| 5 | 206 | 232 | 276 | 270 | 242 | 454 | 291 | 190 | 474 | 241 | 142 | 259 |
| 6 | 210 | 234 | 280 | 282 | 268 | 471 | 322 | 150 | 498 | 250 | 148 | 264 |
| 7 | 214 | 246 | 286 | 296 | 299 | 483 | 347 | 152 | 515 | 257 | 155 | 267 |
| 8 | 224 | 250 | 290 | 314 | 250 | 490 | 372 | 161 | 532 | 268 | 161 | 270 |
| 9 | 230 | 254 | 296 | 332 | 109 | 515 | 398 | 156 | 400 | 275 | 169 | 275 |
| 10 | 232 | 262 | 300 | 346 | 103 | 525 | 429 | 176 | 424 | 284 | 174 | 278 |
| 11 | 242 | 268 | 306 | 362 | 95 | 530 | 453 | 200 | 289 | 289 | 181 | 281 |
| 12 | 250 | 200 | 275 | 384 | 90 | 540 | 481 | 205 | 311 | 296 | 186 | 285 |
| 13 | 258 | 210 | 183 | 390 | 100 | 620 | 400 | 251 | 426 | 301 | 191 | 288 |
| 14 | 260 | 240 | 162 | 404 | 109 | 544 | 156 | 253 | 473 | 308 | 195 | 292 |
| 15 | 262 | 242 | 161 | 384 | 131 | 577 | 109 | 300 | 506 | 312 | 200 | 294 |
| 16 | 266 | 248 | 147 | 410 | 161 | 688 | 86 | 197 | 546 | 316 | 205 | 296 |
| 17 | 272 | 254 | 154 | 416 | 205 | 598 | 89 | 150 | 567 | 318 | 208 | 298 |
| 18 | 274 | 258 | 158 | 412 | 238 | 584 | 96 | 117 | 574 | 321 | 213 | 300 |
| 19 | 286 | 262 | 169 | 432 | 258 | 611 | 116 | 97 | 588 | 325 | 215 | 294 |
| 20 | 290 | 264 | 182 | 400 | 285 | 631 | 145 | 88 | 572 | 329 | 222 | 302 |
| 21 | 294 | 256 | 197 | 136 | 295 | 647 | 198 | 93 | 338 | 333 | 224 | 330 |
| 22 | 294 | 242 | 178 | 120 | 311 | 648 | 233 | 98 | 294 | 334 | 227 | 354 |
| 23 | 296 | 178 | 118 | 80 | 328 | 646 | 264 | 116 | 250 | 334 | 231 | 356 |
| 24 | 332 | 206 | 90 | 75 | 348 | 630 | 290 | 134 | 169 | 338 | 232 | 350 |
| 25 | 306 | 216 | 84 | 76 | 357 | 638 | 310 | 161 | 106 | 341 | 235 | 334 |
| 26 | 314 | 238 | 92 | 77 | 371 | 648 | 350 | 195 | 119 | 344 | 236 | 310 |
| 27 | 320 | 246 | 91 | 82 | 378 | 662 | 317 | 225 | 147 | 400 | 236 | 309 |
| 28 | 324 | 252 | 89 | 103 | 388 | 655 | 260 | 253 | 168 | 384 | 238 | 299 |
| 29 | 336 | 256 | 93 | 135 | 393 | 654 | 232 | 283 | 181 | 425 | 240 | 550 |
| 30 | 352 | 260 | 112 | 189 | --- | 550 | 231 | 311 | 194 | 350 | 244 | 345 |
| 31 | 225 | --- | 140 | 244 | --- | 365 | --- | 342 | --- | 125 | 245 | --- |
| MEAN | 263 | 239 | 193 | 259 | 240 | 558 | 266 | 192 | 377 | 299 | 194 | 303 |

## 07343500 WHITE OAK CREEK NEAR TALCO, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22.0 | 14.0 | 5.0 | 7.0 | 4.0 | 9.0 | 14.0 | 19.0 | 25.5 | 29.0 | 26.0 | 26.0 |
| 2 | 20.0 | 13.0 | 5.0 | 7.0 | 3.0 | 8.0 | 16.0 | 20.0 | 25.5 | 29.0 | 27.0 | 26.5 |
| 3 | 20.0 | 13.0 | 4.0 | 8.0 | 3.0 | 5.0 | 20.0 | 19.0 | 26.0 | 29.0 | 28.0 | 26.0 |
| 4 | 19.0 | 13.0 | 5.0 | 6.0 | 3.0 | 9.0 | 16.0 | 20.0 | 26.0 | 29.0 | 28.0 | 26.0 |
| 5 | --- | 12.0 | 6.0 | 9.0 | 4.5 | 9.0 | 16.0 | 19.0 | 26.5 | 29.0 | 28.0 | 26.0 |
| 6 | 17.0 | 12.0 | 7.0 | 6.0 | 4.5 | 9.0 | 18.0 | 20.0 | 27.0 | 29.0 | 28.0 | 26.0 |
| 7 | 17.0 | 11.0 | 6.0 | 6.0 | 5.0 | 13.0 | 19.0 | 21.0 | 28.0 | 29.0 | 28.0 | 26.0 |
| 8 | 19.0 | 11.0 | 7.0 | 6.0 | 5.0 | 13.5 | 18.0 | 21.0 | 28.0 | 32.0 | 27.0 | 26.0 |
| 9 | 20.0 | 14.0 | 7.0 | 5.0 | 4.0 | 12.0 | 18.0 | 19.0 | 24.0 | 33.0 | 27.0 | 26.0 |
| 10 | 16.5 | 11.0 | 8.0 | 7.0 | 2.5 | 13.0 | 18.0 | 20.0 | 23.5 | 36.0 | 27.0 | 26.0 |
| 11 | 16.0 | 11.0 | 11.0 | 8.5 | 1.0 | 14.0 | 19.0 | 22.0 | 24.0 | 30.0 | 27.0 | 26.0 |
| 12 | 16.0 | 10.0 | 9.0 | 7.0 | 2.0 | 13.0 | 16.5 | 22.0 | 24.0 | 31.0 | 28.0 | 25.5 |
| 13 | 18.0 | 9.0 | 7.0 | 6.0 | 3.0 | 13.0 | 13.0 | 22.0 | 24.0 | 29.0 | 27.0 | 25.5 |
| 14 | 16.0 | 9.0 | 7.0 | 6.0 | 6.0 | 12.0 | 8.5 | 22.0 | 25.0 | 30.0 | 27.0 | 26.0 |
| 15 | 16.0 | 9.0 | 5.0 | 10.0 | 9.0 | 13.0 | 10.0 | 21.0 | 27.0 | 29.0 | 27.0 | 25.5 |
| 16 | 17.5 | 9.0 | 6.5 | 12.0 | 7.0 | 15.5 | 13.0 | 20.0 | 27.0 | 28.0 | 27.0 | 25.5 |
| 17 | 18.0 | 8.5 | 4.0 | 10.0 | 5.0 | 14.0 | 15.0 | 20.0 | 27.0 | 27.0 | 27.0 | 25.5 |
| 18 | 18.0 | 11.0 | 4.0 | 10.0 | 5.0 | 13.0 | 17.0 | 23.0 | 27.0 | 28.0 | 27.0 | 26.0 |
| 19 | 18.0 | 9.0 | 4.0 | 11.0 | 7.0 | 13.0 | 17.0 | 23.0 | 29.0 | 28.0 | 27.0 | 24.0 |
| 20 | 20.0 | 15.0 | 6.0 | 11.0 | 8.0 | 15.0 | 19.5 | 22.0 | 26.0 | 28.0 | 27.0 | 24.0 |
| 21 | 22.0 | 12.0 | 9.0 | 10.0 | 11.0 | 13.0 | 19.0 | 22.0 | 25.0 | 30.0 | 27.0 | 26.0 |
| 22 | 20.0 | 12.0 | 12.0 | 9.0 | 11.0 | 13.0 | 20.0 | 22.0 | 25.0 | 29.0 | 28.0 | 26.0 |
| 23 | 17.0 | 10.0 | 15.0 | 7.0 | 12.0 | 15.0 | 20.0 | 21.0 | 25.0 | 27.0 | 28.0 | 26.0 |
| 24 | 15.0 | 10.0 | 12.0 | 7.0 | 12.0 | 13.0 | 21.5 | 22.0 | 25.0 | 27.0 | 27.0 | 25.0 |
| 25 | 15.0 | 9.0 | 10.0 | 7.0 | 10.0 | 13.0 | 20.5 | 23.0 | 26.5 | 27.0 | 27.0 | 25.0 |
| 26 | 15.0 | 9.0 | 9.0 | 9.0 | 9.0 | 13.0 | 17.0 | 23.0 | 27.5 | 28.0 | 26.5 | 24.0 |
| 27 | 15.0 | 12.0 | 11.0 | 8.0 | 9.0 | 14.0 | 18.0 | 24.5 | 28.0 | 27.0 | 28.0 | 21.0 |
| 28 | 18.0 | 10.0 | 11.0 | 6.0 | 11.0 | 13.5 | 16.0 | 25.0 | 29.0 | 25.0 | 26.0 | 19.0 |
| 29 | 18.0 | 8.0 | 10.0 | 5.0 | 12.0 | 15.0 | 17.0 | 25.0 | 29.0 | 26.0 | 26.0 | 18.0 |
| 30 | 19.0 | 5.0 | 10.0 | 4.0 | --- | 13.0 | 17.0 | 25.0 | 29.0 | 27.0 | 25.0 | 18.0 |
| 31 | 15.0 | --- | 7.0 | 4.0 | --- | 12.0 | --- | 25.0 | --- | 25.0 | 25.0 | --- |
| MEAN | 18.0 | 10.5 | 7.5 | 7.5 | 6.5 | 12.5 | 17.0 | 21.5 | 26.5 | 28.5 | 27.0 | 24.5 |

## 07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX

**LOCATION.**--Lat 33°18'16", long 94°09'38", Bowie-Cass County line, Hydrologic Unit 11140302, in intake structure of Wright Patman Dam on the Sulphur River, 0.5 mi (0.8 km) upstream from U.S. Highway 59, 10 mi (16 km) southwest of Texarkana, and 44.5 mi (71.6 km) upstream from mouth.

**DRAINAGE AREA.**--3,443 $mi^2$ (8,917 $km^2$).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--July 1953 to current year. Published as Texarkana Reservoir prior to October 1970 and as Lake Texarkana from October 1970 to September 1972.

**REVISED RECORDS.**--WSP 1561: 1957(M). WSP 1711: 1959(M).

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). July 19 to Dec. 31, 1953, nonrecording gage at site about 125 ft (38 m) upstream at datum 200 ft (61.0 m) higher.

**REMARKS.**--The lake is formed by a rolled earthfill dam 18,500 ft (5,640 m) long, including a 200-foot (61 m) uncontrolled spillway and a 1-mile (2 km) long dike. Temporary impoundment of water began July 2, 1953, and deliberate impoundment began June 27, 1956. The dam was completed in December 1957. The flood-control outlet works consist of two 20.0-foot-diameter (6.1 m) conduits controlled by four 10.0- by 20.0-foot (3.0 by 6.1 m) electrically driven broome-type gates. Flow is affected at times by discharge from flood-detention pools of 25 floodwater-retarding structures with combined detention capacity of 13,450 acre-ft (16.6 $hm^3$). These structures control runoff from 40.0 $mi^2$ (104 $km^2$) in the Sulphur River and Langford Creek drainage basins. Flow discharging over the spillway passes into an outlet channel and then to the Sulphur River. The lake was built for flood control and conservation. The capacity table is based on a 1948 survey. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 286.0 | - |
| Crest of spillway | 259.5 | 2,654,300 |
| Top of conservation pool | 220.0 | 145,300 |
| Lowest gated outlet (invert) | 200.0 | 2,600 |

**COOPERATION.**--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 1,912,100 acre-ft (2.36 $km^3$) May 9, 1966, elevation, 252.64 ft (77.005 m); minimum since first appreciable storage and after deliberate impoundment began, 137,500 acre-ft (170 $hm^3$) Sept. 5, 1958.

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 437,600 acre-ft (540 $hm^3$) May 30 at 0530 hours, elevation, 230.01 ft (70.107 m); minimum, 154,400 acre-ft (190 $hm^3$) Feb. 29, elevation, 220.44 ft (67.190 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 220.0 | 145,300 | 228.0 | 364,100 |
| 222.0 | 189,300 | 230.0 | 437,200 |
| 224.0 | 240,200 | 232.0 | 518,400 |
| 226.0 | 298,500 | | |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 0700

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 285100 | 167100 | 157600 | 178300 | 258900 | 156100 | 166400 | 302500 | 378800 | 346600 | 300000 | 272300 |
| 2 | 281800 | 167100 | 157600 | 178800 | 256900 | 156300 | 168700 | 297900 | 369000 | 346000 | 299100 | 270800 |
| 3 | 277900 | 166400 | 158000 | 182300 | 250400 | 156300 | 171100 | 292300 | 362400 | 344000 | 297900 | 269900 |
| 4 | 274300 | 165300 | 158200 | 184800 | 242100 | 156900 | 172400 | 289300 | 355800 | 341900 | 297000 | 269300 |
| 5 | 268400 | 164500 | 158200 | 184800 | 232400 | 156500 | 175800 | 286900 | 352700 | 339900 | 296300 | 267900 |
| 6 | 262400 | 162700 | 157800 | 183400 | 216600 | 157100 | 176400 | 287200 | 349700 | 337900 | 295700 | 267000 |
| 7 | 255500 | 161000 | 157800 | 175800 | 201400 | 157800 | 178100 | 286300 | 347700 | 335900 | 294800 | 266100 |
| 8 | 250100 | 159900 | 157600 | 173100 | 192900 | 157600 | 177700 | 287500 | 350700 | 333300 | 293900 | 265500 |
| 9 | 242900 | 160600 | 157400 | 168900 | 198700 | 157800 | 176700 | 289300 | 353800 | 332600 | 292700 | 265000 |
| 10 | 238000 | 159100 | 157600 | 164700 | 197700 | 158000 | 176500 | 290800 | 355100 | 330000 | 292300 | 263800 |
| 11 | 232600 | 158800 | 157600 | 160400 | 197900 | 159900 | 177200 | 291700 | 354800 | 327400 | 288400 | 262600 |
| 12 | 226300 | 158800 | 159900 | 159500 | 185800 | 161000 | 178800 | 294800 | 353800 | 325400 | 299200 | 262400 |
| 13 | 219000 | 157800 | 160800 | 157800 | 190200 | 161200 | 192400 | 298500 | 353100 | 322900 | 289300 | 261500 |
| 14 | 213300 | 157800 | 162300 | 156900 | 183700 | 161200 | 205700 | 297000 | 352100 | 320600 | 288400 | 260300 |
| 15 | 207500 | 158000 | 165100 | 158000 | 180600 | 161200 | 218400 | 304700 | 351000 | 318700 | 287500 | 259500 |
| 16 | 204300 | 158000 | 166000 | 159100 | 180600 | 164700 | 229700 | 309100 | 348700 | 317100 | 286900 | 258300 |
| 17 | 201800 | 158200 | 166200 | 159700 | 184400 | 164700 | 242900 | 313900 | 347700 | 315800 | 286000 | 257400 |
| 18 | 198400 | 159100 | 164900 | 160100 | 188800 | 164300 | 254600 | 319600 | 346300 | 313500 | 285100 | 258300 |
| 19 | 195000 | 159300 | 162900 | 160400 | 190700 | 163200 | 264100 | 326100 | 346300 | 311600 | 284200 | 258900 |
| 20 | 191700 | 159300 | 162300 | 166400 | 189300 | 162100 | 276400 | 336900 | 345600 | 309700 | 283000 | 258300 |
| 21 | 188300 | 162500 | 162300 | 175200 | 184800 | 160100 | 286900 | 342600 | 344600 | 309100 | 281200 | 257500 |
| 22 | 185100 | 163200 | 162900 | 193600 | 177400 | 159500 | 301300 | 350400 | 344600 | 309400 | 279700 | 256900 |
| 23 | 181800 | 162900 | 170900 | 206600 | 175200 | 163600 | 310700 | 357500 | 345300 | 307200 | 278800 | 256300 |
| 24 | 179300 | 163200 | 174900 | 216400 | 173100 | 160100 | 320300 | 362400 | 346000 | 306900 | 278200 | 254100 |
| 25 | 176300 | 164300 | 175800 | 221600 | 164900 | 158200 | 332300 | 373900 | 347000 | 306300 | 277300 | 247600 |
| 26 | 174000 | 164300 | 177200 | 213600 | 162100 | 156700 | 335600 | 380600 | 347700 | 306000 | 276400 | 247100 |
| 27 | 172000 | 162700 | 177700 | 215100 | 159700 | 158400 | 332600 | 389200 | 348300 | 305700 | 276100 | 247400 |
| 28 | 168900 | 161400 | 178800 | 222100 | 157600 | 159500 | 327100 | 395700 | 348700 | 305000 | 275200 | 249600 |
| 29 | 167500 | 159500 | 176300 | 237700 | 154400 | 163600 | 315800 | 396100 | 348000 | 303500 | 275500 | 254700 |
| 30 | 168900 | 159100 | 179500 | 249300 | --- | 164500 | 309100 | 393200 | 347000 | 302200 | 274300 | 258600 |
| 31 | 168400 | --- | 181100 | 256600 | --- | 164500 | --- | 386300 | --- | 301300 | 273400 | --- |
| MAX | 285100 | 167100 | 181100 | 256600 | 258900 | 164700 | 335600 | 396100 | 378800 | 346600 | 300000 | 272300 |
| MIN | 167500 | 157800 | 157400 | 156900 | 154400 | 156100 | 166400 | 286300 | 344600 | 301300 | 273400 | 247100 |
| (†) | 221.09 | 220.66 | 221.65 | 224.59 | 220.24 | 220.91 | 226.34 | 228.63 | 227.50 | 226.09 | 225.17 | 224.66 |
| (‡) | -122300 | -9300 | +22000 | +75500 | -102200 | +10100 | +144600 | +77200 | -39300 | -45700 | -27900 | -14800 |
| (††) | 4930 | 4660 | 4270 | 4640 | 4570 | 4990 | 9500 | 4940 | 4980 | 5400 | 5740 | 5750 |

CAL YR 1979 MAX 539800 MIN 157400 ‡ +21200 †† 52460
WTR YR 1980 MAX 396100 MIN 154400 ‡ -32100 †† 64370

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal and industrial use.

## 07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: March 1967 to current year.

### 331838094095901 WRIGHT PATMAN LAKE SITE AC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | | |
| 07... | 0830 | 1.0 | 142 | 7.2 | 4.5 | .30 | 11.4 | 88 | 51 | 13 |
| 07... | 0832 | 10 | 141 | 7.1 | 4.5 | -- | 11.3 | 87 | -- | -- |
| 07... | 0833 | 20 | 140 | 7.1 | 4.5 | -- | 11.3 | 87 | -- | -- |
| 07... | 0834 | 25 | 140 | 7.1 | 4.5 | -- | 11.3 | 87 | 49 | 11 |
| MAY | | | | | | | | | | |
| 28... | 0930 | 1.0 | 191 | 6.8 | 24.5 | .61 | 4.1 | 49 | 59 | 13 |
| 28... | 0932 | 10 | 191 | 6.7 | 24.0 | -- | 2.9 | 35 | -- | -- |
| 28... | 0933 | 20 | 191 | 6.6 | 23.5 | -- | 2.4 | 28 | -- | -- |
| 28... | 0934 | 29 | 191 | 6.5 | 22.5 | -- | 1.0 | 12 | 58 | 14 |
| AUG | | | | | | | | | | |
| 12... | 1220 | 1.0 | 207 | 8.7 | 32.0 | .70 | 8.9 | 122 | 67 | 9 |
| 12... | 1222 | 10 | 207 | 8.3 | 31.5 | -- | 7.5 | 100 | -- | -- |
| 12... | 1224 | 20 | 207 | 7.1 | 30.0 | -- | 3.3 | 44 | -- | -- |
| 12... | 1226 | 26 | 207 | 7.1 | 30.0 | -- | 2.7 | 36 | 67 | 3 |

| DATE | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 07... | 17 | 2.0 | 7.7 | .5 | 3.6 | 46 | 0 | 17 | 7.4 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | 16 | 2.1 | 7.2 | .5 | 3.6 | 46 | 0 | 16 | 8.5 |
| MAY | | | | | | | | | |
| 28... | 19 | 2.7 | 12 | .7 | 3.3 | 56 | 0 | 23 | 11 |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | 19 | 2.6 | 12 | .7 | 3.1 | 54 | 0 | 23 | 11 |
| AUG | | | | | | | | | |
| 12... | 22 | 2.8 | 13 | .7 | 3.6 | 70 | 0 | 16 | 14 |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12... | 22 | 2.8 | 13 | .7 | 3.8 | 78 | 0 | 16 | 14 |

| DATE | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 07... | .1 | 8.0 | 86 | .28 | .82 | 1.1 | .170 | 150 | 20 |
| 07... | -- | -- | -- | .25 | .96 | 1.2 | .160 | 150 | 20 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | 7.7 | 84 | .27 | .77 | 1.0 | .170 | 120 | 20 |
| MAY | | | | | | | | | |
| 28... | .1 | 5.8 | 105 | .08 | .60 | .68 | .070 | 120 | 8 |
| 28... | -- | -- | -- | .10 | 2.1 | 2.2 | .090 | 180 | 10 |
| 28... | -- | -- | -- | .11 | 3.2 | 3.3 | .090 | 70 | 30 |
| 28... | -- | 6.6 | 104 | .14 | 2.3 | 2.4 | .100 | 150 | 260 |
| AUG | | | | | | | | | |
| 12... | .2 | 5.6 | 112 | .00 | .88 | .88 | .080 | <10 | <1 |
| 12... | -- | -- | -- | .00 | 1.6 | 1.6 | .070 | 10 | 0 |
| 12... | -- | -- | -- | .00 | 1.1 | 1.1 | .090 | 0 | 0 |
| 12... | -- | 6.0 | 116 | .00 | .97 | .97 | .090 | <10 | 90 |

## WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

### 331903094100201 WRIGHT PATMAN LAKE SITE AL

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 07... | 0930 | 1.0 | 150 | 7.2 | 5.0 | 11.1 | 87 |
| 07... | 0931 | 10 | 150 | 7.2 | 5.0 | 11.1 | 87 |
| 07... | 0932 | 15 | 150 | 7.2 | 5.0 | 11.1 | 87 |
| MAY | | | | | | | |
| 28... | 0915 | 1.0 | 185 | 7.1 | 25.5 | 6.3 | 77 |
| 28... | 0916 | 10 | 191 | 6.7 | 24.0 | 3.7 | 44 |
| 28... | 0917 | 17 | 191 | 6.6 | 23.5 | 2.3 | 27 |
| AUG | | | | | | | |
| 12... | 1310 | 1.0 | 207 | 8.7 | 31.5 | 8.2 | 111 |
| 12... | 1312 | 10 | 207 | 8.6 | 31.5 | 7.8 | 105 |
| 12... | 1314 | 15 | 207 | 8.5 | 31.0 | 7.7 | 103 |

### 332142094115001 WRIGHT PATMAN LAKE SITE BC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 07... | 0950 | 1.0 | 138 | 7.2 | 5.5 | .50 | 11.4 |
| 07... | 0951 | 11 | 138 | 7.2 | 5.5 | -- | 11.4 |
| MAY | | | | | | | |
| 28... | 1010 | 1.0 | 183 | 7.7 | 27.5 | 1.16 | 7.5 |
| 28... | 1011 | 5.0 | 183 | 7.2 | 27.5 | -- | 6.4 |
| 28... | 1012 | 10 | 183 | 6.5 | 24.0 | -- | 2.1 |
| 28... | 1013 | 16 | 183 | 6.5 | 23.5 | -- | 1.4 |
| AUG | | | | | | | |
| 12... | 1340 | 1.0 | 207 | 9.0 | 32.5 | .60 | 8.2 |
| 12... | 1342 | 5.0 | 207 | 9.0 | 32.5 | -- | 8.2 |
| 12... | 1344 | 12 | 207 | 7.4 | 31.5 | -- | 3.4 |

| DATE | OXYGEN, DISSOLVED (PERCENT SATURATION) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 07... | 90 | .25 | .94 | 1.2 | .060 | 170 | 20 |
| 07... | 90 | .22 | .97 | 1.2 | .060 | 170 | 20 |
| MAY | | | | | | | |
| 28... | 95 | .05 | .51 | .56 | .050 | 20 | 40 |
| 28... | 81 | -- | -- | -- | -- | -- | -- |
| 28... | 25 | -- | -- | -- | -- | -- | -- |
| 28... | 16 | .12 | 2.5 | 2.6 | .070 | 80 | 190 |
| AUG | | | | | | | |
| 12... | 114 | .00 | 1.4 | 1.4 | .070 | 20 | 0 |
| 12... | 114 | -- | -- | -- | -- | -- | -- |
| 12... | 46 | .00 | 1.3 | 1.3 | .090 | 10 | 20 |

## WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

### 331935094112901 WRIGHT PATMAN LAKE SITE CC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 07... | 1005 | 1.0 | 137 | 7.0 | 5.5 | .50 | 10.7 |
| 07... | 1006 | 10 | 139 | 7.0 | 5.5 | -- | 10.7 |
| 07... | 1007 | 16 | 139 | 7.0 | 5.5 | -- | 10.7 |
| MAY | | | | | | | |
| 28... | 1040 | 1.0 | 181 | 7.8 | 27.5 | 1.01 | 7.4 |
| 28... | 1041 | 5.0 | 181 | 7.6 | 26.5 | -- | 7.2 |
| 28... | 1042 | 10 | 170 | 6.7 | 25.5 | -- | 4.0 |
| 28... | 1043 | 22 | 187 | 6.5 | 22.5 | -- | .6 |
| AUG | | | | | | | |
| 12... | 1405 | 1.0 | 204 | 9.0 | 32.0 | .70 | 8.7 |
| 12... | 1407 | 10 | 204 | 8.1 | 31.0 | -- | 5.5 |
| 12... | 1409 | 15 | 207 | 7.2 | 30.5 | -- | 2.7 |
| 12... | 1411 | 19 | 207 | 7.0 | 30.5 | -- | .9 |

| DATE | OXYGEN, DISSOLVED (PERCENT SATURATION) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 07... | 85 | .31 | 1.1 | 1.4 | .090 | 210 | 40 |
| 07... | 85 | -- | -- | -- | -- | -- | -- |
| 07... | 85 | .30 | 1.0 | 1.3 | .090 | 210 | 40 |
| MAY | | | | | | | |
| 28... | 94 | .05 | 2.8 | 2.9 | .040 | 70 | 50 |
| 28... | 90 | -- | -- | -- | -- | -- | -- |
| 28... | 49 | -- | -- | -- | -- | -- | -- |
| 28... | 7 | .15 | .10 | .25 | .140 | 120 | 400 |
| AUG | | | | | | | |
| 12... | 119 | .00 | .95 | .95 | .060 | 0 | 10 |
| 12... | 73 | -- | -- | -- | -- | -- | -- |
| 12... | 36 | -- | -- | -- | -- | -- | -- |
| 12... | 12 | .00 | 1.4 | 1.4 | .120 | 30 | 640 |

### 331628094121901 WRIGHT PATMAN LAKE SITE DR

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 07... | 1045 | 1.0 | 154 | 7.3 | 4.5 | 11.7 | 90 |
| 07... | 1046 | 8.0 | 154 | 7.3 | 4.5 | 11.7 | 90 |
| MAY | | | | | | | |
| 28... | 1130 | 1.0 | 194 | 7.9 | 26.5 | 7.8 | 98 |
| 28... | 1131 | 10 | 196 | 7.2 | 26.0 | 6.1 | 75 |
| 28... | 1132 | 14 | 198 | 6.9 | 25.5 | 4.0 | 49 |
| AUG | | | | | | | |
| 12... | 1500 | 1.0 | 209 | 8.7 | 32.0 | 8.4 | 115 |
| 12... | 1502 | 5.0 | 209 | 8.4 | 30.5 | 7.4 | 99 |
| 12... | 1504 | 11 | 209 | 7.3 | 30.5 | 4.3 | 57 |

## WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

### 331706094130501 WRIGHT PATMAN LAKE SITE DC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 07... | 1030 | 1.0 | 145 | 7.2 | 4.5 | 11.3 | 87 |
| 07... | 1031 | 10 | 145 | 7.2 | 4.5 | 11.3 | 87 |
| 07... | 1032 | 20 | 145 | 7.2 | 4.5 | 11.3 | 87 |
| 07... | 1033 | 30 | 145 | 7.2 | 4.5 | 11.3 | 87 |
| MAY | | | | | | | |
| 28... | 1110 | 1.0 | 191 | 8.0 | 27.5 | 7.7 | 97 |
| 28... | 1111 | 10 | 191 | 7.2 | 26.5 | 6.2 | 78 |
| 28... | 1112 | 15 | 194 | 6.7 | 24.0 | 2.3 | 27 |
| 28... | 1113 | 20 | 194 | 6.6 | 23.0 | 1.2 | 14 |
| 28... | 1114 | 30 | 199 | 6.7 | 22.0 | .2 | 2 |
| 28... | 1115 | 33 | 199 | 6.7 | 22.0 | .2 | 2 |
| AUG | | | | | | | |
| 12... | 1445 | 1.0 | 209 | 8.7 | 32.0 | 8.1 | 111 |
| 12... | 1447 | 5.0 | 209 | 8.3 | 31.0 | 7.2 | 96 |
| 12... | 1449 | 10 | 209 | 7.1 | 30.0 | 3.2 | 43 |
| 12... | 1451 | 20 | 211 | 7.0 | 30.0 | 1.9 | 25 |
| 12... | 1453 | 30 | 224 | 7.0 | 29.5 | .1 | 1 |

### 331519094141101 WRIGHT PATMAN LAKE SITE EC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 07... | 1100 | 1.0 | 156 | 7.2 | 5.0 | .30 | 11.3 | 88 | 51 |
| 07... | 1101 | 10 | 156 | 7.2 | 5.0 | -- | 11.3 | 88 | -- |
| 07... | 1102 | 20 | 156 | 7.2 | 5.0 | -- | 11.3 | 88 | 52 |
| MAY | | | | | | | | | |
| 28... | 1204 | 1.0 | 195 | 8.3 | 28.0 | .61 | 8.3 | 106 | 59 |
| 28... | 1205 | 5.0 | 195 | 8.1 | 27.5 | -- | 7.8 | 99 | -- |
| 28... | 1206 | 10 | 211 | 6.7 | 26.0 | -- | 3.3 | 41 | -- |
| 28... | 1207 | 15 | 218 | 6.6 | 24.5 | -- | 1.0 | 12 | -- |
| 28... | 1208 | 20 | 203 | 6.6 | 23.5 | -- | .4 | 5 | -- |
| 28... | 1209 | 29 | 203 | 6.7 | 22.5 | -- | .2 | 2 | 62 |
| AUG | | | | | | | | | |
| 12... | 1520 | 1.0 | 213 | 7.6 | 32.5 | .70 | 5.6 | 78 | 70 |
| 12... | 1522 | 5.0 | 213 | 7.4 | 30.0 | -- | 4.6 | 61 | -- |
| 12... | 1524 | 10 | 213 | 7.2 | 30.0 | -- | 3.6 | 48 | -- |
| 12... | 1526 | 15 | 213 | 7.1 | 30.0 | -- | 3.5 | 47 | -- |
| 12... | 1528 | 20 | 215 | 7.1 | 29.5 | -- | 2.3 | 30 | -- |
| 12... | 1530 | 27 | 228 | 7.1 | 29.5 | -- | .1 | 1 | 73 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 07... | 13 | 17 | 2.1 | 8.6 | .5 | 3.6 | 47 | 0 | 21 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | 8 | 17 | 2.2 | 8.8 | .5 | 3.6 | 53 | 0 | 23 |
| MAY | | | | | | | | | |
| 28... | 12 | 19 | 2.9 | 12 | .7 | 3.3 | 58 | 0 | 22 |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | 3 | 20 | 3.0 | 12 | .7 | 3.2 | 72 | 0 | 21 |
| AUG | | | | | | | | | |
| 12... | 3 | 23 | 3.0 | 13 | .7 | 3.7 | 82 | 0 | 16 |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12... | 0 | 24 | 3.1 | 13 | .7 | 3.7 | 94 | 0 | 14 |

## WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

### 331519094141101 WRIGHT PATMAN LAKE SITE EC--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 07... | 9.2 | 7.9 | 93 | .23 | .96 | 1.2 | .160 | 180 | 50 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | 8.7 | 8.1 | 98 | .23 | .86 | 1.1 | .170 | 370 | 220 |
| MAY | | | | | | | | | |
| 28... | 12 | 4.8 | 105 | .04 | 1.1 | 1.1 | .090 | 60 | 3 |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | -- | -- | -- | .14 | 2.8 | 2.9 | .100 | 100 | 140 |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | -- | -- | -- | .16 | 1.5 | 1.7 | .160 | 120 | 530 |
| 28... | 11 | 9.0 | 116 | .09 | 2.9 | 3.0 | .240 | 150 | 1100 |
| AUG | | | | | | | | | |
| 12... | 13 | 6.5 | 119 | .00 | 1.3 | 1.3 | .100 | <10 | 20 |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12... | -- | -- | -- | .00 | 1.5 | 1.5 | .120 | 20 | 40 |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12... | -- | -- | -- | .00 | .94 | .94 | .120 | 20 | 150 |
| 12... | 14 | 8.5 | 128 | .00 | 1.2 | 1.2 | .190 | 120 | 1400 |

### 331533094210901 WRIGHT PATMAN LAKE SITE GC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 07... | 1310 | 1.0 | 200 | 7.0 | 5.0 | .20 | 10.6 | 83 | 57 |
| 07... | 1312 | 10 | 200 | 7.0 | 5.0 | -- | 10.6 | 83 | -- |
| 07... | 1313 | 20 | 200 | 7.0 | 5.0 | -- | 10.6 | 83 | 61 |
| MAY | | | | | | | | | |
| 28... | 1430 | 1.0 | 203 | 6.9 | 26.0 | .30 | 5.4 | 67 | 74 |
| 28... | 1432 | 5.0 | 207 | 6.8 | 25.5 | -- | 4.1 | 50 | -- |
| 28... | 1433 | 10 | 210 | 6.8 | 25.0 | -- | 3.5 | 43 | -- |
| 28... | 1434 | 20 | 210 | 6.8 | 25.0 | -- | 3.4 | 41 | -- |
| 28... | 1435 | 23 | 210 | 6.8 | 25.0 | -- | 3.4 | 41 | 77 |
| AUG | | | | | | | | | |
| 12... | 1720 | 1.0 | 241 | 7.4 | 31.5 | .50 | 7.5 | 101 | 81 |
| 12... | 1722 | 5.0 | 241 | 7.0 | 30.5 | -- | 3.6 | 48 | -- |
| 12... | 1724 | 10 | 241 | 6.8 | 30.0 | -- | .6 | 8 | -- |
| 12... | 1726 | 15 | 241 | 6.8 | 30.0 | -- | .1 | 1 | -- |
| 12... | 1728 | 19 | 241 | 6.8 | 30.0 | -- | .1 | 1 | 79 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 07... | 24 | 17 | 3.6 | 14 | .8 | 3.8 | 40 | 0 | 34 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | 28 | 18 | 3.8 | 15 | .8 | 3.8 | 40 | 0 | 34 |
| MAY | | | | | | | | | |
| 28... | 5 | 25 | 2.8 | 9.5 | .5 | 4.1 | 84 | 0 | 17 |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | 5 | 26 | 3.0 | 9.5 | .5 | 4.3 | 88 | 0 | 18 |
| AUG | | | | | | | | | |
| 12... | 0 | 27 | 3.4 | 14 | .7 | 4.8 | 100 | 0 | 14 |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12... | 0 | 26 | 3.4 | 14 | .7 | 4.7 | 100 | 0 | 15 |

## 331533094210901 WRIGHT PATMAN LAKE SITE GC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 07... | 17 | 9.1 | 118 | .28 | .76 | 1.0 | .120 | 210 | 30 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | 17 | 9.4 | 121 | .25 | .71 | .96 | .130 | 220 | 30 |
| MAY | | | | | | | | | |
| 28... | 7.7 | 8.2 | 116 | .27 | 2.9 | 3.2 | .170 | 130 | 30 |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | -- | -- | -- | .20 | 2.2 | 2.4 | .190 | 120 | 30 |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | 7.6 | 8.5 | 120 | .25 | .54 | .79 | .190 | 120 | 40 |
| AUG | | | | | | | | | |
| 12... | 18 | 7.1 | 138 | .00 | 1.0 | 1.0 | .090 | 10 | 7 |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12... | -- | -- | -- | .00 | 1.2 | 1.2 | .130 | 40 | 450 |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12... | 16 | 7.8 | 138 | .00 | 1.3 | 1.3 | .380 | 1200 | 950 |

## 331838094095901 WRIGHT PATMAN LAKE SITE AC

## WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | ARSENIC DISSOLVED (UG/L AS AS) | BARIUM, DISSOLVED (UG/L AS BA) | CADMIUM DISSOLVED (UG/L AS CD) | CHROMIUM, DISSOLVED (UG/L AS CR) | COPPER, DISSOLVED (UG/L AS CU) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 07... | 0830 | 1.0 | 1 | 30 | <1 | 0 | 0 |
| 07... | 0832 | 10 | -- | -- | -- | -- | -- |
| 07... | 0834 | 25 | 1 | 30 | <1 | 0 | 0 |
| MAY | | | | | | | |
| 28... | 0930 | 1.0 | 1 | 40 | 1 | 0 | 3 |
| 28... | 0932 | 10 | -- | -- | -- | -- | -- |
| 28... | 0933 | 20 | -- | -- | -- | -- | -- |
| 28... | 0934 | 29 | 1 | 40 | 1 | 0 | 3 |
| AUG | | | | | | | |
| 12... | 1220 | 1.0 | 4 | 40 | <1 | 10 | 0 |
| 12... | 1222 | 10 | -- | -- | -- | -- | -- |
| 12... | 1224 | 20 | -- | -- | -- | -- | -- |
| 12... | 1226 | 26 | 4 | 40 | 1 | 0 | 0 |

| DATE | IRON, DISSOLVED (UG/L AS FE) | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY DISSOLVED (UG/L AS HG) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 07... | 150 | 0 | 20 | .0 | 0 | 0 | 7 |
| 07... | 150 | -- | 20 | -- | -- | -- | -- |
| 07... | 120 | 1 | 20 | .0 | 0 | 0 | 10 |
| MAY | | | | | | | |
| 28... | 120 | 2 | 8 | .0 | 0 | 0 | <3 |
| 28... | 180 | -- | 10 | -- | -- | -- | -- |
| 28... | 70 | -- | 30 | -- | -- | -- | -- |
| 28... | 150 | 2 | 260 | .0 | 1 | 0 | 30 |
| AUG | | | | | | | |
| 12... | <10 | 1 | <1 | .1 | 0 | 0 | <3 |
| 12... | 10 | -- | 0 | -- | -- | -- | -- |
| 12... | 0 | -- | 0 | -- | -- | -- | -- |
| 12... | <10 | 2 | 90 | .0 | 0 | 0 | 20 |

## WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

### 331838094095901 WRIGHT PATMAN LAKE SITE AC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| DATE | FEB 7,80 | MAY 28,80 | AUG 12,80 |
|---|---|---|---|
| TIME | 0831 | 1031 | 1221 |
| TOTAL CELLS/ML | 690 | 9700 | 170000 |
| DIVERSITY: DIVISION | 0.9 | 1.5 | 0.3 |
| .CLASS | 0.9 | 1.5 | 0.3 |
| ..ORDER | 1.1 | 1.7 | 0.5 |
| ...FAMILY | 1.4 | 2.2 | 0.8 |
| ....GENUS | 2.1 | 3.0 | 1.4 |

| ORGANISM | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | -- | - | 56 | 1 | -- | - |
| ...COELASTRACEAE | | | | | | |
| ....COELASTRUM | -- | - | 1000 | 10 | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 120# | 17 | 510 | 5 | * | 0 |
| ....DICTYOSPHAERIUM | -- | - | -- | - | * | 0 |
| ....KIRCHNERIELLA | 28 | 4 | 1500# | 15 | -- | - |
| ....OOCYSTIS | 22 | 3 | 110 | 1 | -- | - |
| ....SELENASTRUM | -- | - | -- | - | * | 0 |
| ....TREUBARIA | -- | - | 56 | 1 | * | 0 |
| ...SCENEDESMACEAE | | | | | | |
| ....SCENEDESMUS | 44 | 6 | 340 | 3 | 2000 | 1 |
| ....TETRASTRUM | 22 | 3 | -- | - | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | -- | - | * | 0 |
| ...PHACOTACEAE | | | | | | |
| ....PTEROMONAS | -- | - | -- | - | * | 0 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 390# | 56 | 3400# | 35 | 1400 | 1 |
| ....MELOSIRA | 55 | 8 | 960 | 10 | -- | - |
| ....STEPHANODISCUS | -- | - | 110 | 1 | -- | - |
| ..PENNALES | | | | | | |
| ...FRAGILARIACEAE | | | | | | |
| ....SYNEDRA | 6 | 1 | -- | - | -- | - |
| ...NAVICULACEAE | | | | | | |
| ....NAVICULA | 6 | 1 | -- | - | -- | - |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 6 | 1 | 110 | 1 | 1000 | 1 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENLLUM | -- | - | 450 | 5 | -- | - |
| ....ANACYSTIS | -- | - | 280 | 3 | 4400 | 3 |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENOPSIS | -- | - | -- | - | 7400 | 4 |
| ....APHANIZOMENON | -- | - | 840 | 9 | -- | - |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | -- | - | 28000# | 17 |
| ....OSCILLATORIA | -- | - | -- | - | 120000# | 73 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....EUGLENA | -- | - | -- | - | * | 0 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

### 331533094210901 WRIGHT PATMAN LAKE SITE GC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| DATE | FEB 7,80 | MAY 28,80 | AUG 12,80 |
|---|---|---|---|
| TIME | 1311 | 1431 | 1721 |
| TOTAL CELLS/ML | 360 | 24000 | 45000 |
| DIVERSITY: DIVISION | 0.8 | 1.6 | 1.1 |
| .CLASS | 0.8 | 1.6 | 1.1 |
| ..ORDER | 1.4 | 2.2 | 1.9 |
| ...FAMILY | 1.8 | 2.8 | 2.0 |
| ....GENUS | 2.0 | 3.6 | 2.9 |

| ORGANISM | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | -- | - | -- | - | * | 0 |
| ...HYDRODICTYACEAE | | | | | | |
| ....PEDIASTRUM | -- | - | 790 | 3 | -- | - |
| ...MICRACTINIACEAE | | | | | | |
| ....MICRACTINIUM | 10 | 3 | 530 | 2 | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 30 | 8 | 660 | 3 | * | 0 |
| ....CHODATELLA | -- | - | 130 | 1 | -- | - |
| ....DICTYOSPHAERIUM | 20 | 6 | 790 | 3 | 420 | 1 |
| ....KIRCHNERIELLA | -- | - | 260 | 1 | -- | - |
| ....OOCYSTIS | -- | - | 130 | 1 | -- | - |
| ....SELENASTRUM | -- | - | -- | - | 310 | 1 |
| ....TETRAEDRON | -- | - | 130 | 1 | 310 | 1 |
| ....TREUBARIA | -- | - | -- | - | * | 0 |
| ...SCENEDESMACEAE | | | | | | |
| ....CRUCIGENIA | -- | - | -- | - | 1000 | 2 |
| ....SCENEDESMUS | 20 | 6 | 2400 | 10 | 2500 | 6 |
| ..TETRASPORALES | | | | | | |
| ...COCCOMYXACEAE | | | | | | |
| ....ELAKATOTHRIX | 10 | 3 | -- | - | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | 530 | 2 | 520 | 1 |
| ....CHLOROGONIUM | -- | - | -- | - | * | 0 |
| ...PHACOTACEAE | | | | | | |
| ....PTEROMONAS | -- | - | -- | - | * | 0 |
| ..ZYGNEMATALES | | | | | | |
| ...DESMIDIACEAE | | | | | | |
| ....EUASTRUM | -- | - | -- | - | * | 0 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 230# | 63 | 4400# | 18 | 1300 | 3 |
| ....MELOSIRA | -- | - | 5400# | 22 | 2500 | 6 |
| ..PENNALES | | | | | | |
| ...ACHNANTHACEAE | | | | | | |
| ....ACHNANTHES | -- | - | 660 | 3 | * | 0 |
| ...FRAGILARIACEAE | | | | | | |
| ....SYNEDRA | -- | - | 260 | 1 | -- | - |
| ...NAVICULACEAE | | | | | | |
| ....NAVICULA | 20 | 6 | 130 | 1 | -- | - |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 25 | 7 | 790 | 3 | 310 | 1 |
| ...SURIRELLACEAE | | | | | | |
| ....SURIRELLA | -- | - | 260 | 1 | -- | - |
| .XANTHOPHYCEAE | | | | | | |
| ..HETEROCOCCALES | | | | | | |
| ...CHLOROTHECIACEAE | | | | | | |
| ....OPHIOCYTIUM | -- | - | -- | - | * | 0 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | | | |
| ....CHROOMONAS | -- | - | 130 | 1 | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | -- | - | 2100 | 9 | 3300 | 7 |
| ....ANACYSTIS | -- | - | 2500 | 10 | 20000# | 44 |
| ....GOMPHOSPHAERIA | -- | - | -- | - | 1300 | 3 |
| ..HORMOGONALES | | | | | | |
| ...OSCILLATORIACEAE | | | | | | |
| ....OSCILLATORIA | -- | - | 920 | 4 | 7700# | 17 |
| ....PHORMIDIUM | -- | - | -- | - | 1700 | 4 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....EUGLENA | -- | - | 130 | 1 | * | 0 |
| ....TRACHELOMONAS | -- | - | 260 | 1 | 310 | 1 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 07344210 SULPHUR RIVER NEAR TEXARKANA, TX

LOCATION.--Lat 33°18'20", long 94°09'03", Bowie County, Hydrologic Unit 11140302, on downstream side of highway embankment near left end of downstream (northbound) bridge on U.S. Highway 59, 0.4 mi (0.6 km) downstream from Texarkana Dam, 1.4 mi (2.3 km) upstream from Elliott Creek, 11.7 mi (18.8 km) southwest of Texarkana, and at mile 44.1 (71.0 km).

DRAINAGE AREA.--3,443 $mi^2$ (8,917 $km^2$).

PERIOD OF RECORD.--October 1979 to September 1980. August 1937 to July 1953 and October 1953 to September 1979 (daily gage heights); January to December 1933, January 1937 to December 1942, and January 1945 to September 1979 (discharge measurements); January to December 1939 and January 1945 to September 1979 (daily discharges) published by Corps of Engineers.

GAGE.--Water-stage recorder. Datum of gage is 180.00 ft (54.864 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair above 50 $ft^3/s$ (1.42 $m^3/s$) and poor below. Daily discharge determined from flow through gates, computed from relation between discharge, head, and gate openings, and adjusted to discharge measurements. Flow regulated by Wright Patman Lake (station 07344200). Several observations of water temperature were made during the year.

EXTEMES FOR PERIOD OF RECORD.--Maximum discharge, 10,400 $ft^3/s$ (295 $m^3/s$) Jan. 28 to Feb. 6, 1980; maximum gage height, 32.47 ft (9.897 m) Feb. 2, 1980 at 2400 hours; no flow June 25, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 94,000 $ft^3/s$ (2,660 $m^3/s$) Apr. 4, 1945; maximum stage, 47.23 ft (14.396 m) Apr. 14, 1945; no flow on various occasions.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,400 $ft^3/s$ (295 $m^3/s$) Jan. 28 to Feb. 6; maximum gage height, 32.47 ft (9.897 m) Feb. 2 at 2400 hours; no flow June 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1930 | 1000 | 200 | 5280 | 10400 | 506 | 79 | 6080 | 6050 | 642 | 87 | 88 |
| 2 | 1200 | 1000 | 67 | 6030 | 10400 | 302 | 10 | 4550 | 6050 | 642 | 87 | 88 |
| 3 | 1000 | 1000 | 1.1 | 6030 | 10400 | 200 | 10 | 3670 | 4580 | 642 | 87 | 88 |
| 4 | 1410 | 1000 | 1.1 | 6030 | 10400 | 80 | 10 | 2960 | 2990 | 642 | 87 | 88 |
| 5 | 2290 | 1000 | 1.1 | 6030 | 10400 | 7.8 | 10 | 2000 | 1960 | 642 | 87 | 88 |
| 6 | 2600 | 1000 | 5.2 | 6030 | 10400 | 7.8 | 10 | 1220 | 1230 | 642 | 87 | 88 |
| 7 | 2600 | 1000 | 10 | 6030 | 10200 | 7.8 | 10 | 679 | 651 | 642 | 87 | 88 |
| 8 | 2600 | 1000 | 10 | 4490 | 10100 | 7.8 | 10 | 367 | 472 | 642 | 41 | 88 |
| 9 | 2600 | 1000 | 10 | 2980 | 7200 | 7.8 | 10 | 106 | 472 | 642 | 10 | 88 |
| 10 | 2600 | 677 | 10 | 2590 | 5820 | 7.8 | 10 | 6.2 | 472 | 642 | 35 | 88 |
| 11 | 2600 | 500 | 10 | 1930 | 5820 | 7.8 | 10 | 6.2 | 472 | 642 | 88 | 88 |
| 12 | 2600 | 500 | 10 | 1220 | 8120 | 7.8 | 10 | 6.2 | 472 | 642 | 88 | 88 |
| 13 | 2600 | 309 | 129 | 1020 | 7250 | 130 | 10 | 6.2 | 472 | 642 | 88 | 88 |
| 14 | 2600 | 77 | 200 | 689 | 7660 | 200 | 10 | 6.2 | 472 | 642 | 88 | 88 |
| 15 | 2600 | 10 | 394 | 312 | 8600 | 200 | 10 | 6.2 | 472 | 383 | 88 | 88 |
| 16 | 1930 | 10 | 828 | 200 | 8600 | 397 | 10 | 6.2 | 472 | 228 | 88 | 88 |
| 17 | 1600 | 10 | 1460 | 200 | 8600 | 830 | 10 | 6.2 | 472 | 228 | 88 | 88 |
| 18 | 1600 | 10 | 1740 | 396 | 8600 | 1020 | 10 | 6.2 | 472 | 228 | 88 | 88 |
| 19 | 1600 | 10 | 1740 | 509 | 8600 | 1020 | 10 | 6.2 | 472 | 228 | 88 | 88 |
| 20 | 1600 | 10 | 1260 | 509 | 8600 | 1020 | 142 | 6.2 | 472 | 228 | 88 | 88 |
| 21 | 1600 | 10 | 1000 | 846 | 8600 | 696 | 444 | 6.2 | 472 | 140 | 88 | 88 |
| 22 | 1600 | 129 | 1000 | 1430 | 8600 | 510 | 864 | 6.2 | 472 | 87 | 88 | 88 |
| 23 | 1200 | 200 | 1000 | 2340 | 6820 | 510 | 1450 | 127 | 472 | 87 | 88 | 88 |
| 24 | 1000 | 200 | 1390 | 3440 | 4420 | 829 | 2300 | 200 | 387 | 87 | 88 | 88 |
| 25 | 1000 | 200 | 2250 | 5390 | 3650 | 1020 | 3430 | 407 | 145 | 87 | 88 | 88 |
| 26 | 1000 | 377 | 3350 | 8600 | 2960 | 694 | 5300 | 846 | 484 | 87 | 88 | 88 |
| 27 | 1000 | 780 | 3780 | 9780 | 1960 | 318 | 6080 | 1410 | 642 | 87 | 88 | 88 |
| 28 | 1000 | 971 | 3780 | 10200 | 1230 | 200 | 6080 | 2290 | 642 | 87 | 88 | 88 |
| 29 | 1000 | 704 | 5270 | 10400 | 690 | 200 | 6080 | 3370 | 642 | 87 | 88 | 88 |
| 30 | 1000 | 292 | 4520 | 10400 | --- | 200 | 6080 | 5200 | 642 | 87 | 88 | 88 |
| 31 | 1000 | --- | 3780 | 10400 | --- | 200 | --- | 6050 | --- | 87 | 88 | --- |
| TOTAL | 54560 | 14986 | 39206.5 | 131731 | 215100 | 11344.4 | 38509 | 41612.6 | 34647 | 11521 | 2543 | 2640 |
| MEAN | 1760 | 500 | 1265 | 4249 | 7417 | 366 | 1284 | 1342 | 1155 | 372 | 82.0 | 88.0 |
| MAX | 2600 | 1000 | 5270 | 10400 | 10400 | 1020 | 6080 | 6080 | 6050 | 642 | 88 | 88 |
| MIN | 1000 | 10 | 1.1 | 200 | 690 | 7.8 | 10 | 6.2 | 145 | 87 | 10 | 88 |
| AC-FT | 108200 | 29720 | 77770 | 261300 | 426700 | 22500 | 76380 | 82540 | 68720 | 22850 | 5040 | 5240 |

CAL YR 1979 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1980 TOTAL 598400.5 MEAN 1635 MAX 10400 MIN 1.1 AC-FT 1187000

## 07344482 BIG CYPRESS CREEK NEAR WINNSBORO, TX

LOCATION.--Lat 33°01'24", long 95°16'12", Franklin County, Hydrologic Unit 11140305, on left bank at downstream side of bridge on State Highway 37, 0.3 mi (0.5 km) downstream from Glade Branch, 1.8 mi (2.9 km) upstream from Little Cypress Creek, 4.7 mi (7.6 km) north of Winnsboro, and 146.5 mi (235.7 km) upstream from mouth.

DRAINAGE AREA.--27.2 mi² (70.4 km²).

PERIOD OF RECORD.--March 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 375.83 ft (114.553 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow affected slightly by Lake Franklin located upstream on Glade Branch. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--6 years (water years 1975-80), 22.0 ft³/s (0.623 m³/s), 10.98 in/yr (279 mm/yr), 15,940 acre-ft/yr (19.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,320 ft³/s (122 m³/s) Nov. 24, 1974, gage height, 12.39 ft (3.776 m); no flow Aug. 24, 1974, June 29 to Sept. 30, Oct. 1-25, 1978, and Aug. 9-15, 23-31, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 900 ft³/s (25.5 m³/s) and maximum (*):

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Jan. 22 | 1515 | *1,380 | 39.1 | 10.91 | 3.325 | Apr. 25 | 1830 | 933 | 28.1 | 10.60 | 3.231 |
| Feb. 8 | 2330 | 910 | 25.8 | 10.52 | 3.206 | May 16 | 0645 | 1,060 | 30.0 | 10.66 | 3.249 |
| Apr. 14 | 0030 | 1,080 | 30.6 | 10.68 | 3.255 | | | | | | |

Minimum discharge, no flow Aug. 9-15, 23-31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .90 | 7.2 | 3.6 | 7.0 | 19 | 6.1 | 15 | 11 | 2.7 | .83 | .21 | .10 |
| 2 | .73 | 3.9 | 3.6 | 6.7 | 17 | 5.4 | 12 | 169 | 2.4 | .76 | .25 | .35 |
| 3 | .67 | 3.2 | 3.7 | 9.8 | 15 | 6.5 | 11 | 36 | 1.8 | .68 | .32 | .25 |
| 4 | .61 | 3.0 | 3.8 | 10 | 14 | 7.1 | 8.6 | 16 | 1.7 | .67 | .24 | .17 |
| 5 | .71 | 3.0 | 4.7 | 7.7 | 13 | 5.4 | 7.9 | 12 | 1.8 | .59 | .28 | .15 |
| 6 | .73 | 2.8 | 3.7 | 8.1 | 13 | 5.6 | 8.2 | 11 | 1.8 | .51 | .20 | .13 |
| 7 | .72 | 2.9 | 3.8 | 6.1 | 12 | 6.6 | 9.0 | 10 | 1.6 | .48 | .08 | .11 |
| 8 | 1.1 | 3.2 | 3.5 | 5.9 | 264 | 5.9 | 15 | 19 | 1.2 | .45 | .02 | .08 |
| 9 | .76 | 52 | 3.4 | 5.8 | 448 | 5.6 | 8.5 | 24 | 1.2 | .38 | .00 | .06 |
| 10 | .62 | 16 | 3.9 | 6.1 | 121 | 5.6 | 7.2 | 12 | 1.3 | .34 | .00 | .04 |
| 11 | .84 | 6.2 | 4.5 | 7.1 | 46 | 5.7 | 6.7 | 8.5 | 1.3 | .30 | .00 | .02 |
| 12 | .83 | 4.5 | 11 | 6.0 | 29 | 24 | 7.2 | 42 | 1.4 | .29 | .00 | .02 |
| 13 | .71 | 4.0 | 34 | 5.7 | 22 | 13 | 529 | 43 | 1.4 | .25 | .00 | .13 |
| 14 | .60 | 3.7 | 12 | 5.6 | 19 | 7.2 | 573 | 17 | 1.3 | .21 | .00 | .27 |
| 15 | .67 | 3.6 | 7.6 | 6.0 | 18 | 6.2 | 49 | 102 | 1.4 | .15 | .00 | .21 |
| 16 | .99 | 3.5 | 6.1 | 33 | 15 | 9.4 | 25 | 662 | 1.2 | .12 | .38 | .17 |
| 17 | 1.6 | 3.5 | 4.8 | 16 | 12 | 18 | 16 | 50 | 1.0 | .07 | .38 | .61 |
| 18 | 2.0 | 4.1 | 4.7 | 10 | 12 | 9.4 | 13 | 16 | 1.0 | .05 | .25 | .43 |
| 19 | 1.3 | 5.1 | 5.0 | 8.3 | 12 | 7.2 | 11 | 10 | 1.1 | .04 | .19 | 1.2 |
| 20 | 1.4 | 5.1 | 5.2 | 17 | 11 | 7.3 | 9.8 | 8.0 | 16 | .08 | .15 | 1.4 |
| 21 | 1.0 | 7.1 | 5.3 | 146 | 10 | 5.5 | 8.7 | 12 | 6.2 | .09 | .11 | 1.6 |
| 22 | 1.2 | 8.2 | 62 | 909 | 8.9 | 5.3 | 7.7 | 36 | 52 | .47 | .04 | 1.5 |
| 23 | .85 | 5.9 | 50 | 207 | 7.9 | 5.9 | 6.9 | 10 | 36 | .53 | .00 | 1.2 |
| 24 | .80 | 4.6 | 88 | 38 | 7.6 | 5.9 | 6.8 | 6.9 | 4.3 | .37 | .00 | .86 |
| 25 | .89 | 4.2 | 22 | 25 | 7.0 | 4.9 | 386 | 5.7 | 2.2 | .25 | .00 | 1.5 |
| 26 | .98 | 4.2 | 13 | 19 | 6.5 | 5.1 | 363 | 5.0 | 1.5 | .28 | .00 | 1.6 |
| 27 | 1.1 | 4.9 | 10 | 16 | 6.7 | 9.9 | 38 | 4.1 | 1.2 | .41 | .00 | 1.6 |
| 28 | .95 | 3.2 | 8.9 | 14 | 7.2 | 56 | 20 | 3.7 | 1.2 | .79 | .00 | 2.5 |
| 29 | .98 | 3.2 | 8.5 | 80 | 6.7 | 72 | 14 | 3.3 | 1.1 | .47 | .00 | 12 |
| 30 | 15 | 3.3 | 8.4 | 50 | --- | 44 | 11 | 3.0 | .93 | .39 | .00 | 6.4 |
| 31 | 44 | --- | 7.4 | 32 | --- | 20 | --- | 2.7 | --- | .26 | .00 | --- |
| TOTAL | 86.24 | 189.3 | 416.1 | 1723.9 | 1200.5 | 401.7 | 2204.2 | 1370.9 | 153.23 | 11.56 | 3.10 | 36.66 |
| MEAN | 2.78 | 6.31 | 13.4 | 55.6 | 41.4 | 13.0 | 73.5 | 44.2 | 5.11 | .37 | .10 | 1.22 |
| MAX | 44 | 52 | 88 | 909 | 448 | 72 | 573 | 662 | 52 | .83 | .38 | 12 |
| MIN | .60 | 2.8 | 3.4 | 5.6 | 6.5 | 4.9 | 6.7 | 2.7 | .93 | .04 | .00 | .02 |
| CFSM | .10 | .23 | .49 | 2.04 | 1.52 | .48 | 2.70 | 1.63 | .19 | .01 | .004 | .05 |
| IN. | .12 | .26 | .57 | 2.36 | 1.64 | .55 | 3.01 | 1.87 | .21 | .02 | .00 | .05 |
| AC-FT | 171 | 375 | 825 | 3420 | 2380 | 797 | 4370 | 2720 | 304 | 23 | 6.1 | 73 |

CAL YR 1979 TOTAL 9050.44 MEAN 24.8 MAX 678 MIN .33 CFSM .91 IN 12.38 AC-FT 17950
WTR YR 1980 TOTAL 7797.39 MEAN 21.3 MAX 909 MIN .00 CFSM .78 IN 10.66 AC-FT 15470

## 07344484 LAKE CYPRESS SPRINGS NEAR MOUNT VERNON, TX

**LOCATION.**--Lat 33°03'22", long 95°08'21", Franklin County, Hydrologic Unit 11140305, in brick meter house located on upstream side and near center of dam on Big Cypress Creek, 1.5 mi (2.4 km) upstream from Andy's Creek, 2.6 mi (4.2 km) downstream from Panther Creek, and 10.3 mi (16.6 km) southeast of Mount Vernon.

**DRAINAGE AREA.**--75.0 mi² (194.2 km²).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1973 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

**REMARKS.**--The lake is formed by a rolled earthfill dam 5,230 ft (1,590 m) long. Deliberate impoundment began July 7, 1970, and the dam was completed Feb. 15, 1971. The emergency spillway is an excavated channel through natural ground 1,000 ft (300 m) wide located to the left of left end of dam. The service spillway is a rectangular 23- by 23 foot (7 by 7 m) drop inlet located near the right end of dam. The low-flow outlet works consist of an 18-inch-diameter (457 mm) concrete pipe that has duplicate valve controls and discharges into the service spillway conduit. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 397.0 | - |
| Crest of spillway | 385.0 | 100,400 |
| Crest of spillway | 378.0 | 72,850 |
| Lowest gated outlet (invert) | 317.75 | 0 |

**COOPERATION.**--The capacity table, furnished by the Franklin County Water District, was based on data prepared by Wisenbaker, Fix, and Associates, Consulting Engineers. Records of diversions furnished by Franklin County Water District.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 83,770 acre-ft (103 hm³) Feb. 2, 1975, elevation, 381.00 ft (116.129 m); minimum, 59,440 acre-ft (73.3 hm³) Nov. 12-14, 1978, elevation, 373.79 ft (113.931 m).

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 78,070 acre-ft (96.3 hm³) Jan. 23 at 0500 hours, elevation, 378.48 ft (115.666 m); minimum, 67,950 acre-ft (83.8 hm³) Sept. 23, elevation, 376.53 ft (114.766 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 376.0 | 66,240 | 379.0 | 76,340 |
| 377.0 | 69,490 | 380.0 | 79,980 |
| 378.0 | 72,850 | | |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 74060 | 73540 | 73120 | 73950 | 75140 | 73500 | 74090 | 74820 | 73670 | 73020 | 71090 | 69160 |
| 2 | 73850 | 73500 | 73020 | 73880 | 74960 | 73500 | 74060 | 75030 | 73570 | 72990 | 70950 | 69090 |
| 3 | 73740 | 73430 | 73020 | 73880 | 74820 | 73470 | 73990 | 74930 | 73540 | 72950 | 70850 | 68990 |
| 4 | 73640 | 73330 | 73050 | 73850 | 74650 | 73470 | 73850 | 74790 | 73470 | 72810 | 70790 | 68990 |
| 5 | 73500 | 73300 | 73120 | 73740 | 74610 | 73430 | 73810 | 74650 | 73360 | 72710 | 70650 | 68900 |
| 6 | 73430 | 73260 | 73050 | 73710 | 74470 | 73400 | 73740 | 74440 | 73330 | 72680 | 70590 | 68800 |
| 7 | 73360 | 73230 | 73050 | 73710 | 74370 | 73500 | 73880 | 74330 | 73260 | 72680 | 70520 | 68770 |
| 8 | 73330 | 73190 | 72990 | 73640 | 75380 | 73430 | 73710 | 74230 | 73230 | 72580 | 70490 | 68860 |
| 9 | 73190 | 73740 | 72990 | 73610 | 76230 | 73400 | 73670 | 74120 | 73190 | 72510 | 70350 | 68800 |
| 10 | 73190 | 73670 | 73050 | 73710 | 76270 | 73400 | 73570 | 74060 | 73160 | 72410 | 70320 | 68470 |
| 11 | 73120 | 73610 | 73090 | 73610 | 75950 | 73470 | 73610 | 73990 | 73090 | 72370 | 70290 | 68410 |
| 12 | 73090 | 73570 | 73500 | 73500 | 75700 | 73670 | 73640 | 74260 | 73050 | 72240 | 70220 | 68340 |
| 13 | 72990 | 73500 | 73540 | 73570 | 75450 | 73640 | 75560 | 74330 | 72990 | 72170 | 70150 | 68210 |
| 14 | 72880 | 73470 | 73500 | 73540 | 75210 | 73610 | 76450 | 74190 | 72920 | 72070 | 70120 | 68210 |
| 15 | 72880 | 73470 | 73500 | 73740 | 74960 | 73570 | 76200 | 75100 | 72850 | 72000 | 70050 | 68210 |
| 16 | 72880 | 73430 | 73430 | 73850 | 74790 | 73740 | 75810 | 75980 | 72850 | 71930 | 69950 | 68140 |
| 17 | 72990 | 73360 | 73400 | 73850 | 74650 | 73670 | 75450 | 75880 | 72750 | 71900 | 69920 | 68080 |
| 18 | 72990 | 73400 | 73400 | 73850 | 74470 | 73670 | 75210 | 75490 | 72750 | 71800 | 69820 | 68080 |
| 19 | 73020 | 73430 | 73400 | 73880 | 74440 | 73610 | 75000 | 75310 | 72710 | 71690 | 69790 | 68140 |
| 20 | 72990 | 73470 | 73430 | 74060 | 74370 | 73540 | 74750 | 75030 | 73230 | 71590 | 69650 | 68080 |
| 21 | 73050 | 73640 | 73570 | 74750 | 74260 | 73500 | 74650 | 75100 | 73230 | 71730 | 69620 | 68050 |
| 22 | 73020 | 73500 | 73920 | 77960 | 74190 | 73400 | 74470 | 75030 | 73500 | 71630 | 69490 | 68050 |
| 23 | 72950 | 73470 | 74440 | 77850 | 74120 | 73260 | 74300 | 74820 | 73640 | 71520 | 69390 | 68050 |
| 24 | 72920 | 73400 | 74540 | 77200 | 73950 | 73360 | 74120 | 74610 | 73640 | 71420 | 69320 | 68240 |
| 25 | 72880 | 73400 | 74510 | 76700 | 73850 | 73360 | 75630 | 74440 | 73500 | 71420 | 69290 | 68210 |
| 26 | 72880 | 73400 | 74440 | 76230 | 73780 | 73330 | 75910 | 74330 | 73430 | 71360 | 69220 | 68110 |
| 27 | 72850 | 73360 | 74300 | 75840 | 73780 | 73610 | 75740 | 74190 | 73330 | 71360 | 69190 | 68140 |
| 28 | 72850 | 73260 | 74160 | 75590 | 73780 | 73780 | 75450 | 74120 | 73260 | 71290 | 69130 | 68270 |
| 29 | 72810 | 73160 | 74160 | 75590 | 73670 | 74300 | 75210 | 74020 | 73190 | 71260 | 69290 | 68990 |
| 30 | 73570 | 73160 | 74090 | 75520 | --- | 74260 | 74960 | 73850 | 73120 | 71220 | 69220 | 69060 |
| 31 | 73570 | --- | 73990 | 75350 | --- | 74190 | --- | 73740 | --- | 71120 | 69160 | --- |
| MAX | 74060 | 73740 | 74540 | 77960 | 76270 | 74300 | 76450 | 75980 | 73670 | 73020 | 71090 | 69160 |
| MIN | 72810 | 73160 | 72990 | 73500 | 73670 | 73260 | 73570 | 73740 | 72710 | 71120 | 69130 | 68050 |
| (†) | 378.21 | 378.09 | 378.33 | 378.72 | 378.24 | 378.39 | 378.61 | 378.26 | 378.08 | 377.49 | 376.90 | 376.87 |
| (‡) | -550 | -410 | +830 | +1360 | -1680 | +520 | +770 | -1220 | -620 | -2000 | -1960 | -100 |
| (††) | 43 | 46 | 46 | 47 | 47 | 47 | 40 | 46 | 46 | 52 | 172 | 99 |

CAL YR 1979 MAX 78100 MIN 62520 ‡ +11440 †† 622
WTR YR 1980 MAX 77960 MIN 68050 ‡ -5060 †† 733

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal and commercial use.

## 07344484 LAKE CYPRESS SPRINGS NEAR MOUNT VERNON, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1974 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 11... | 1110 | 162 | 7.5 | 42 | 15 | 8.9 | 4.7 | 11 | .7 |
| SEP | | | | | | | | | |
| 10... | 1810 | 184 | 32.0 | 49 | 16 | 11 | 5.3 | 14 | .9 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | |
| 11... | 3.8 | 32 | 0 | 20 | 15 | .2 | 3.9 | 83 |
| SEP | | | | | | | | |
| 10... | 4.6 | 40 | 0 | 23 | 21 | .2 | 2.7 | 102 |

## 07344486 BRUSHY CREEK AT SCROGGINS, TX

**LOCATION.**--Lat 32°58'32", long 95°11'03", Franklin County, Hydrologic Unit 11140305, on downstream side of highway embankment near left end of bridge on Farm Road 115, 0.1 mi (0.2 km) north of Scroggins, 0.3 mi (0.5 km) downstream from Briary Creek, 2.5 mi (4.0 km) upstream from South Brushy Creek, and 9.5 mi (15.3 km) upstream from mouth.

**DRAINAGE AREA.**--23.4 $mi^2$ (60.6 $km^2$).

**PERIOD OF RECORD.**--December 1977 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 343.90 ft (104.821 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Records good. Several observations of water temperature were made during the year.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 2,140 $ft^3/s$ (60.6 $m^3/s$) Sept. 20, 1979, gage height, 13.46 ft (4.103 m); no flow for many days during period December 1977 to September 1978 and part of day on July 7, 1980.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 1,880 $ft^3/s$ (53.2 $m^3/s$) May 2 at 0300 hours, gage height, 13.37 ft (4.075 m), no other peak above base of 800 $ft^3/s$ (22.7 $m^3/s$); no flow July 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.7 | 16 | 7.9 | 12 | 19 | 10 | 19 | 20 | 5.3 | .22 | .16 | .31 |
| 2 | 6.6 | 9.2 | 7.7 | 12 | 18 | 8.9 | 17 | 564 | 5.1 | .09 | .15 | .26 |
| 3 | 6.1 | 7.2 | 7.7 | 17 | 17 | 8.8 | 16 | 85 | 5.1 | .05 | .16 | .23 |
| 4 | 4.8 | 6.4 | 7.7 | 16 | 15 | 9.8 | 14 | 30 | 4.8 | .03 | .15 | .23 |
| 5 | 4.7 | 6.2 | 8.7 | 13 | 16 | 9.2 | 13 | 21 | 4.4 | .03 | .15 | .23 |
| 6 | 4.6 | 6.2 | 8.4 | 12 | 16 | 8.3 | 13 | 25 | 3.8 | .01 | .19 | .20 |
| 7 | 4.6 | 6.0 | 7.5 | 12 | 14 | 8.9 | 13 | 21 | 3.3 | .01 | .17 | .19 |
| 8 | 4.9 | 6.3 | 6.8 | 11 | 88 | 9.1 | 12 | 32 | 3.0 | .02 | .15 | .22 |
| 9 | 4.8 | 85 | 6.6 | 11 | 174 | 8.1 | 10 | 43 | 4.0 | .02 | .16 | .25 |
| 10 | 4.9 | 42 | 7.0 | 11 | 109 | 8.1 | 10 | 19 | 3.4 | .01 | .15 | .27 |
| 11 | 5.3 | 16 | 7.9 | 12 | 41 | 8.3 | 10 | 14 | 3.1 | .01 | .15 | .25 |
| 12 | 5.1 | 11 | 18 | 10 | 27 | 42 | 14 | 16 | 2.6 | .02 | .32 | .23 |
| 13 | 4.6 | 10 | 61 | 9.9 | 22 | 17 | 130 | 34 | 2.4 | .02 | .34 | .20 |
| 14 | 4.1 | 9.0 | 22 | 10 | 20 | 10 | 159 | 19 | 2.2 | .02 | .31 | .17 |
| 15 | 4.0 | 8.4 | 15 | 10 | 19 | 9.1 | 40 | 39 | 2.0 | .02 | .28 | .18 |
| 16 | 5.2 | 8.2 | 13 | 18 | 17 | 82 | 23 | 199 | 1.8 | .03 | .34 | .20 |
| 17 | 6.2 | 7.8 | 10 | 15 | 15 | 145 | 19 | 69 | 2.0 | .03 | .30 | .19 |
| 18 | 9.6 | 8.4 | 10 | 12 | 15 | 28 | 17 | 26 | 2.7 | .04 | .25 | .19 |
| 19 | 6.4 | 11 | 10 | 11 | 15 | 20 | 15 | 18 | 3.2 | .05 | .22 | .26 |
| 20 | 5.5 | 12 | 11 | 34 | 14 | 19 | 13 | 15 | 16 | .06 | .21 | .33 |
| 21 | 4.6 | 22 | 11 | 69 | 13 | 15 | 12 | 13 | 19 | .08 | .17 | .29 |
| 22 | 4.8 | 24 | 45 | 356 | 12 | 14 | 11 | 13 | 16 | .14 | .15 | .25 |
| 23 | 4.7 | 14 | 46 | 152 | 11 | 14 | 10 | 11 | 20 | .20 | .13 | .23 |
| 24 | 4.6 | 11 | 102 | 45 | 11 | 15 | 10 | 10 | 1.8 | .19 | .11 | .25 |
| 25 | 4.5 | 10 | 27 | 29 | 10 | 12 | 165 | 9.3 | 1.4 | .18 | .10 | .40 |
| 26 | 4.5 | 10 | 20 | 23 | 9.2 | 12 | 162 | 9.1 | 1.4 | .20 | .09 | .41 |
| 27 | 4.7 | 9.4 | 17 | 19 | 9.5 | 21 | 43 | 7.8 | 1.4 | .20 | .10 | .37 |
| 28 | 4.8 | 8.4 | 15 | 18 | 9.9 | 83 | 25 | 6.8 | .96 | .20 | .14 | .79 |
| 29 | 4.9 | 7.7 | 14 | 41 | 9.8 | 62 | 19 | 6.3 | .66 | .23 | .26 | 4.3 |
| 30 | 13 | 7.7 | 16 | 37 | --- | 52 | 16 | 5.6 | .42 | .23 | .45 | 5.8 |
| 31 | 63 | --- | 13 | 27 | --- | 22 | --- | 5.2 | --- | .20 | .36 | --- |
| TOTAL | 227.8 | 416.5 | 579.9 | 1084.9 | 786.4 | 791.6 | 1050 | 1406.1 | 143.24 | 2.84 | 6.37 | 17.68 |
| MEAN | 7.35 | 13.9 | 18.7 | 35.0 | 27.1 | 25.5 | 35.0 | 45.4 | 4.77 | .092 | .21 | .59 |
| MAX | 63 | 85 | 102 | 356 | 174 | 145 | 165 | 564 | 20 | .23 | .45 | 5.8 |
| MIN | 4.0 | 6.0 | 6.6 | 9.9 | 9.2 | 8.1 | 10 | 5.2 | .42 | .01 | .09 | .17 |
| CFSM | .31 | .59 | .80 | 1.50 | 1.16 | 1.09 | 1.50 | 1.94 | .20 | .004 | .009 | .03 |
| IN. | .36 | .66 | .92 | 1.72 | 1.25 | 1.26 | 1.67 | 2.24 | .23 | .00 | .01 | .03 |
| AC-FT | 452 | 826 | 1150 | 2150 | 1560 | 1570 | 2080 | 2790 | 284 | 5.6 | 13 | 35 |

CAL YR 1979 TOTAL 7228.55 MEAN 19.8 MAX 670 MIN .41 CFSM .85 IN 11.49 AC-FT 14340

WTR YR 1980 TOTAL 6513.33 MEAN 17.8 MAX 564 MIN .01 CFSM .76 IN 10.35 AC-FT 12920

## 07344489 LAKE BOB SANDLIN NEAR MOUNT PLEASANT, TX

LOCATION.--Lat 33°04'48", long 95°00'07", Titus County, Hydrologic Unit 11140305, in control room in left abutment of service spillway at left end of Fort Sherman Dam on Big Cypress Creek, 1.7 mi (2.7 km) upstream from Tankersley Creek, 3.5 mi (5.6 km) upstream from bridge on U.S. Highway 271, 5.7 mi (9.2 km) southwest of the county courthouse in Mount Pleasant, and 129.2 mi (207.9 km) upstream from mouth.

DRAINAGE AREA.--239 mi² (619 km²).

PERIOD OF RECORD.--August 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. A nonrecording gage was located at same site and datum prior to Apr. 12, 1978.

REMARKS.--The lake is formed by a rolled earthfill dam 10,800 ft (3,290 m) long including spillways. Deliberate impoundment began Aug. 8, 1977, and the dam was completed by April 1978. The emergency spillway is an excavated channel cut through natural ground. The spillway is 4,500 ft (1,400 m) wide, located to the left of the left end of the dam. The service spillway is 289.5 ft (88.2 m) wide with 160 ft (50 m) of net flow width controlled by four 40- by 22.5-foot (12 by 6.9 m) tainter gates. The dam was built and is owned, maintained, and operated by the Titus County Fresh Water Supply District No. 1 to provide water for municipal use. Flow from 75.0 mi² (194.2 km²) above this station is controlled by Lake Cypress Springs on Big Cypress Creek and from 36.0 mi² (93.2 km²) above this station is controlled by Montecello Reservoir on Blundell Creek, a tributary to Big Cypress Creek. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 349.0 | - |
| Crest of uncontrolled spillway | 341.3 | 251,000 |
| Crest of gated spillway | 316.5 | 64,790 |
| Lowest gated outlet (invert) | 294.5 | 3,300 |

COOPERATION.--Area and capacity tables were compiled by Forest and Cotton, Inc., Consulting Engineers. Records of diversions and return flow were furnished by Titus County Fresh Water Supply District No. 1.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 171,100 acre-ft (211 hm³) Apr. 15, 1980, elevation, 332.77 ft (101.428 m); minimum, 516 acre-ft (0.636 hm³) Aug. 8-17, 1977, elevation, 290.00 ft (88.392 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 171,100 acre-ft (211 hm³) Apr. 15 at 0900 hours, elevation, 332.77 ft (101.428 m); minimum observed, 110,200 acre-ft (136 hm³) Oct. 29, elevation, 324.60 ft (98.938 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 324.0 | 106,400 | 330.0 | 148,700 |
| 326.0 | 119,600 | 332.0 | 164,700 |
| 328.0 | 133,700 | 334.0 | 181,600 |

### CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 113600 | 111700 | 113700 | 120100 | 145900 | 161800 | 165800 | 166600 | 166000 | 162700 | 154600 | 147700 |
| 2 | 113500 | 111700 | 113600 | 120300 | 146300 | 161900 | 165400 | 166500 | 166000 | 162400 | 154200 | 147500 |
| 3 | 113400 | 111700 | 113700 | 120600 | 146600 | 162000 | 165300 | 165400 | 165900 | 162100 | 153900 | 147400 |
| 4 | 113400 | 111600 | 113700 | 120700 | 146900 | 162200 | 165100 | 165800 | 166000 | 161900 | 153500 | 147400 |
| 5 | 113000 | 111500 | 113700 | 120800 | 147300 | 162000 | 165000 | 166000 | 165900 | 161600 | 153300 | 147100 |
| 6 | 112800 | 111400 | 113700 | 121000 | 147500 | 162100 | 165000 | 165700 | 165800 | 161300 | 152900 | 147000 |
| 7 | 112700 | 111200 | 113700 | 120900 | 147700 | 162300 | 165400 | 165400 | 165800 | 161000 | 152800 | 146900 |
| 8 | 112500 | 111200 | 113400 | 121000 | 151000 | 162400 | 165000 | 165500 | 165900 | 160700 | 152400 | 146700 |
| 9 | 112300 | 112300 | 113400 | 121100 | 155000 | 162400 | 164900 | 165700 | 165800 | 160400 | 152000 | 146700 |
| 10 | 112100 | 112500 | 113200 | 121400 | 156400 | 162400 | 164700 | 165500 | 165800 | 160200 | 151700 | 146600 |
| 11 | 111900 | 112600 | 113200 | 121200 | 156900 | 162600 | 165000 | 165400 | 165500 | 159900 | 151600 | 146500 |
| 12 | 111800 | 112800 | 114200 | 121200 | 157500 | 163400 | 165200 | 165600 | 165200 | 159500 | 151300 | 146300 |
| 13 | 111500 | 112800 | 114400 | 121300 | 158100 | 163500 | 169000 | 165500 | 165000 | 159200 | 151200 | 146200 |
| 14 | 111400 | 112800 | 114600 | 121400 | 158600 | 163600 | 170800 | 165500 | 164700 | 158900 | 150800 | 146100 |
| 15 | 111300 | 112800 | 114800 | 121400 | 159200 | 163600 | 168500 | 167700 | 164500 | 158600 | 150600 | 145900 |
| 16 | 111200 | 112800 | 114700 | 122200 | 159500 | 165000 | 167000 | 166900 | 164200 | 158200 | 150500 | 145800 |
| 17 | 111300 | 112900 | 114800 | 122300 | 159800 | 166200 | 167000 | 167700 | 164000 | 157900 | 150100 | 145500 |
| 18 | 111300 | 113100 | 114800 | 122500 | 160100 | 166500 | 166700 | 167700 | 163700 | 157600 | 149900 | 145900 |
| 19 | 111300 | 113200 | 114900 | 122800 | 160400 | 166400 | 166500 | 165700 | 163400 | 157300 | 149500 | 145900 |
| 20 | 111300 | 113400 | 114900 | 123700 | 160700 | 166100 | 166200 | 166000 | 164500 | 157100 | 149300 | 146000 |
| 21 | 111300 | 113900 | 115400 | 126600 | 160800 | 166000 | 166000 | 166900 | 164200 | 156900 | 149000 | 145800 |
| 22 | 111200 | 113900 | 116000 | 136100 | 161000 | 165900 | 165900 | 167100 | 165000 | 156800 | 148700 | 145800 |
| 23 | 111200 | 113900 | 117700 | 138900 | 161200 | 166700 | 165700 | 167000 | 164900 | 156500 | 148200 | 145600 |
| 24 | 111100 | 113900 | 118200 | 140400 | 161300 | 165900 | 165500 | 166700 | 164600 | 156200 | 148000 | 146000 |
| 25 | 110900 | 114100 | 118600 | 141200 | 161400 | 165700 | 166900 | 166400 | 164400 | 155900 | 147700 | 145800 |
| 26 | 110700 | 114100 | 119000 | 142000 | 161500 | 165500 | 166000 | 166000 | 164100 | 155500 | 147400 | 145600 |
| 27 | 110600 | 114000 | 119300 | 142500 | 161600 | 166000 | 166500 | 165900 | 163700 | 155700 | 147500 | 145700 |
| 28 | 110400 | 113900 | 119500 | 143000 | 161700 | 166000 | 166500 | 166000 | 163400 | 155500 | 147300 | 145900 |
| 29 | 110200 | 113700 | 119800 | 144100 | 161900 | 166500 | 166200 | 166000 | 163200 | 155400 | 148000 | 149000 |
| 30 | 111400 | 113700 | 120000 | 145000 | --- | 166100 | 166200 | 166000 | 162900 | 155000 | 148000 | 149000 |
| 31 | 111700 | --- | 120100 | 145500 | --- | 165800 | --- | 166000 | --- | 154800 | 147900 | --- |
| MAX | 113600 | 114100 | 120100 | 145500 | 161900 | 166700 | 170800 | 167700 | 166000 | 162700 | 154600 | 149000 |
| MIN | 110200 | 111200 | 113200 | 120100 | 145900 | 161800 | 164700 | 165400 | 162900 | 154800 | 147300 | 145500 |
| (†) | 324.83 | 325.13 | 326.08 | 329.58 | 331.65 | 332.13 | 332.18 | 332.18 | 331.08 | 330.77 | 329.89 | 330.03 |
| (‡) | -1800 | +2000 | +6400 | +25400 | +16400 | +3900 | +400 | 0 | -8900 | -2500 | -6900 | +1100 |
| (††) | 2820 | 677 | 1850 | 259 | 220 | 236 | 224 | 166 | 2150 | 1790 | 1940 | 478 |

CAL YR 1979 MAX - MIN 13970 ‡ - †† -
WTR YR 1980 MAX 170800 MIN 110200 ‡ +35500 †† 12810

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal use.

## 07344500 BIG CYPRESS CREEK NEAR PITTSBURG, TX

LOCATION.--Lat 33°01'15", long 94°52'55", Camp-Titus County line, Hydrologic Unit 11140305, near center of stream at downstream side of bridge on State Highway 11, 0.5 mi (0.8 km) upstream from Louisiana & Arkansas Railway Co. bridge, 1.4 mi (2.3 km) upstream from Williamson Creek, 5.2 mi (8.4 km) east of Pittsburg, 19.2 mi (30.9 km) downstream from Lake Bob Sandlin, and 110.0 mi (177.0 km) upstream from mouth.

DRAINAGE AREA.--366 mi² (948 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1943 to January 1963 (published as Cypress Creek near Pittsburg), October 1967 to current year. Gage-height records collected at this site September 1963 to December 1967 are published in reports by the Corps of Engineers.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 247.49 ft (75.435 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 12, 1954, water-stage recorder at site 1,900 ft (579 m) downstream at present datum.

REMARKS.--Water-discharge records good. Flow partly regulated by Lake Cypress Springs (station 07344484) since July 1970 and by Monticello Reservoir (on Blundell Creek) since August 1972. Flow largely regulated by Lake Bob Sandlin (station 07344489) since August 1977. Records furnished by the city of Mount Pleasant show that 3,140 acre-ft (3.87 hm³) of sewage effluent was returned to a tributary above the station. Records furnished by the city of Pittsburg show that 718 acre-ft (0.885 hm³) of sewage effluent was returned to a tributary below the station.

AVERAGE DISCHARGE.--24 years (water years 1944-62, 1968-72), prior to combined regulation by Lake Cypress Springs and Monticello Reservoir, 327 ft³/s (9.261 m³/s), 12.13 in/yr (308 mm/yr), 236,900 acre-ft/yr (292 hm³/yr); 8 years (water years 1973-80) regulated, 280 ft³/s (7.930 m³/s) 202,900 acre-ft/yr (250 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,500 ft³/s (1,660 m³/s) Mar. 30, 1945, gage height, 28.3 ft (8.63 m), from floodmark and adjusted to present site on basis of record for flood of Apr. 27, 1958, from rating curve extended above 20,000 ft³/s (566 m³/s); no flow Aug. 20 to Oct 3, 1954, July 19 to Nov. 4, 1956.

Maximum stage since at least 1895, that of Mar. 30, 1945.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in January 1938 reached a stage of about 25 ft (7.6 m), present site, adjusted as explained above, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,870 ft³/s (138 m³/s) Jan. 22 at 2000 hours, gage height, 14.83 ft (4.520 m); minimum, 2.6 ft³/s (0.074 m³/s) Aug. 27, 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 23 | 184 | 19 | 39 | 173 | 38 | 372 | 433 | 26 | 13 | 9.0 | 8.5 |
| 2 | 21 | 55 | 18 | 36 | 101 | 37 | 312 | 754 | 24 | 12 | 8.3 | 4.8 |
| 3 | 20 | 25 | 18 | 38 | 79 | 35 | 249 | 1900 | 22 | 12 | 9.1 | 3.6 |
| 4 | 19 | 20 | 17 | 49 | 69 | 34 | 178 | 2210 | 21 | 12 | 9.2 | 2.9 |
| 5 | 18 | 18 | 17 | 44 | 67 | 35 | 96 | 802 | 20 | 11 | 8.7 | 3.3 |
| 6 | 16 | 16 | 19 | 38 | 79 | 35 | 86 | 202 | 19 | 10 | 7.3 | 3.8 |
| 7 | 16 | 15 | 19 | 36 | 73 | 35 | 83 | 325 | 17 | 9.7 | 5.2 | 4.2 |
| 8 | 15 | 15 | 17 | 32 | 173 | 35 | 83 | 334 | 29 | 10 | 4.9 | 3.9 |
| 9 | 13 | 156 | 16 | 31 | 1010 | 34 | 81 | 202 | 201 | 9.9 | 4.6 | 4.0 |
| 10 | 15 | 386 | 16 | 29 | 1540 | 33 | 79 | 52 | 390 | 9.3 | 5.0 | 4.7 |
| 11 | 15 | 153 | 19 | 30 | 1010 | 33 | 81 | 165 | 132 | 9.1 | 5.0 | 7.6 |
| 12 | 15 | 40 | 22 | 29 | 496 | 74 | 118 | 174 | 31 | 12 | 4.8 | 5.1 |
| 13 | 14 | 28 | 207 | 27 | 205 | 112 | 407 | 214 | 23 | 12 | 4.3 | 3.9 |
| 14 | 13 | 24 | 303 | 26 | 124 | 61 | 1480 | 398 | 20 | 10 | 4.1 | 3.6 |
| 15 | 12 | 21 | 150 | 26 | 100 | 40 | 1760 | 249 | 19 | 9.6 | 4.3 | 3.3 |
| 16 | 13 | 20 | 54 | 65 | 87 | 108 | 1670 | 828 | 17 | 9.5 | 4.3 | 2.9 |
| 17 | 14 | 19 | 37 | 187 | 70 | 832 | 1910 | 3800 | 15 | 8.5 | 4.3 | 3.4 |
| 18 | 25 | 19 | 30 | 105 | 59 | 468 | 879 | 1820 | 15 | 8.1 | 4.4 | 8.0 |
| 19 | 26 | 22 | 28 | 52 | 57 | 161 | 472 | 984 | 15 | 7.8 | 4.1 | 7.9 |
| 20 | 18 | 24 | 28 | 178 | 55 | 159 | 332 | 835 | 29 | 7.9 | 4.0 | 9.5 |
| 21 | 16 | 38 | 27 | 723 | 51 | 221 | 293 | 944 | 151 | 8.4 | 3.9 | 6.8 |
| 22 | 15 | 87 | 138 | 3470 | 49 | 167 | 247 | 327 | 170 | 8.1 | 4.1 | 4.6 |
| 23 | 14 | 64 | 376 | 3900 | 46 | 90 | 172 | 430 | 145 | 10 | 4.4 | 3.7 |
| 24 | 15 | 40 | 646 | 1660 | 42 | 90 | 152 | 414 | 122 | 9.9 | 4.6 | 3.2 |
| 25 | 15 | 31 | 587 | 741 | 40 | 96 | 688 | 347 | 38 | 8.8 | 3.7 | 2.8 |
| 26 | 14 | 27 | 273 | 255 | 37 | 114 | 2690 | 319 | 24 | 8.0 | 3.1 | 3.8 |
| 27 | 13 | 23 | 92 | 127 | 37 | 131 | 3040 | 300 | 20 | 8.6 | 2.7 | 4.8 |
| 28 | 13 | 21 | 60 | 91 | 37 | 262 | 1450 | 172 | 18 | 23 | 3.1 | 5.2 |
| 29 | 13 | 19 | 48 | 117 | 37 | 432 | 867 | 39 | 16 | 34 | 6.3 | 13 |
| 30 | 17 | 19 | 47 | 214 | --- | 527 | 539 | 31 | 14 | 15 | 7.1 | 38 |
| 31 | 187 | --- | 45 | 248 | --- | 481 | --- | 28 | --- | 11 | 12 | --- |
| TOTAL | 673 | 1629 | 3393 | 12643 | 6003 | 5010 | 20866 | 20032 | 1803 | 348.2 | 169.9 | 184.8 |
| MEAN | 21.7 | 54.3 | 109 | 408 | 207 | 162 | 696 | 646 | 60.1 | 11.2 | 5.48 | 6.16 |
| MAX | 187 | 386 | 646 | 3900 | 1540 | 832 | 3040 | 3800 | 390 | 34 | 12 | 38 |
| MIN | 12 | 15 | 16 | 26 | 37 | 33 | 79 | 28 | 14 | 7.8 | 2.7 | 2.8 |
| AC-FT | 1330 | 3230 | 6730 | 25080 | 11910 | 9940 | 41390 | 39730 | 3580 | 691 | 337 | 367 |

CAL YR 1979 TOTAL 78884.7 MEAN 216 MAX 4720 MIN 6.6 AC-FT 156500
WTR YR 1980 TOTAL 72754.9 MEAN 199 MAX 3900 MIN 2.7 AC-FT 144300

## 07344500 BIG CYPRESS CREEK NEAR PITTSBURG, TX--Continued

### *WATER-QUALITY RECORDS*

**PERIOD OF RECORD.**--Chemical analyses: October 1967 to current year.

**PERIOD OF DAILY RECORD.**--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: October 1968 to current year.

**REMARKS.**--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

**EXTREMES FOR PERIOD OF DAILY RECORD.**--
SPECIFIC CONDUCTANCE (1968-69, 1971-80): Maximum daily, 941 micromhos Sept. 1, 1971; minimum daily, 69 micromhos July 30, 1969, Sept. 22, 1979.
WATER TEMPERATURES: Maximum daily, 32.0°C Aug. 20, 1969; minimum daily, 0.5°C Jan. 21, 22, 1978.

**EXTREMES FOR CURRENT YEAR.**--
SPECIFIC CONDUCTANCE: Maximum daily, 571 micromhos Sept. 15; minimum daily, 98 micromhos Jan. 23.
WATER TEMPERATURES: Maximum daily, 29.0°C July 19; minimum daily, 2.0°C Feb. 11.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 31... | 1645 | 229 | 175 | 16.0 | 34 | 20 | 8.3 | 3.1 | 13 |
| NOV 30... | 1545 | 19 | 396 | 10.0 | 83 | 62 | 20 | 8.0 | 38 |
| DEC 26... | 0730 | 320 | 256 | 12.0 | 73 | 49 | 17 | 7.5 | 25 |
| FEB 12... | 1550 | 431 | 212 | 5.5 | 51 | 31 | 12 | 5.1 | 17 |
| APR 14... | 0730 | 1310 | 146 | 8.0 | 38 | 17 | 8.8 | 3.9 | 12 |
| MAY 13... | 1215 | 198 | 265 | 21.0 | 65 | 29 | 15 | 6.6 | 25 |
| JUL 22... | 0630 | 8.5 | 401 | 26.0 | 71 | 24 | 18 | 6.4 | 44 |
| AUG 31... | 0930 | 15 | 517 | 25.0 | 78 | 18 | 20 | 6.8 | 59 |
| SEP 03... | 0630 | 3.7 | 550 | 25.0 | 78 | 28 | 20 | 6.9 | 64 |

| DATE | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 31... | 1.0 | 7.5 | 17 | 0 | 25 | 21 | .1 | 9.5 | 96 |
| NOV 30... | 1.8 | 5.8 | 25 | 0 | 68 | 52 | .1 | 19 | 223 |
| DEC 26... | 1.3 | 5.6 | 30 | 0 | 55 | 33 | .1 | 14 | 172 |
| FEB 12... | 1.0 | 3.8 | 24 | 0 | 41 | 22 | .1 | 9.7 | 123 |
| APR 14... | .8 | 4.0 | 26 | 0 | 27 | 18 | .1 | 5.9 | 93 |
| MAY 13... | 1.4 | 4.7 | 44 | 0 | 39 | 33 | .2 | 6.9 | 152 |
| JUL 22... | 2.3 | 9.6 | 58 | 0 | 49 | 55 | .4 | 8.5 | 220 |
| AUG 31... | 2.9 | 12 | 73 | 0 | 54 | 74 | .4 | 6.2 | 268 |
| SEP 03... | 3.1 | 13 | 62 | 0 | 57 | 84 | .5 | 8.3 | 284 |

## 07344500 BIG CYPRESS CREEK NEAR PITTSBURG, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 673 | 295 | 163 | 296 | 38 | 70 | 40 | 72 | 63 |
| NOV. | 1979 | 1629 | 231 | 129 | 568 | 29 | 126 | 32 | 143 | 53 |
| DEC. | 1979 | 3393 | 290 | 160 | 1470 | 37 | 340 | 39 | 362 | 63 |
| JAN. | 1980 | 12643 | 159 | 90 | 3060 | 19 | 660 | 23 | 782 | 38 |
| FEB. | 1980 | 6003 | 220 | 123 | 2000 | 27 | 443 | 31 | 503 | 51 |
| MAR. | 1980 | 5010 | 262 | 146 | 1970 | 33 | 451 | 36 | 487 | 58 |
| APR. | 1980 | 20866 | 185 | 105 | 5910 | 22 | 1250 | 27 | 1530 | 45 |
| MAY | 1980 | 20032 | 199 | 113 | 6090 | 24 | 1300 | 29 | 1570 | 48 |
| JUNE | 1980 | 1803 | 259 | 144 | 703 | 33 | 159 | 36 | 175 | 58 |
| JULY | 1980 | 348.2 | 360 | 196 | 184 | 48 | 45 | 47 | 44 | 73 |
| AUG. | 1980 | 169.9 | 421 | 225 | 103 | 59 | 27 | 52 | 24 | 78 |
| SEPT | 1980 | 184.8 | 482 | 255 | 127 | 69 | 34 | 57 | 28 | 82 |
| TOTAL | | 72754.9 | ** | ** | 22500 | ** | 4900 | ** | 5710 | ** |
| WTD. AVG. | | 199 | 204 | 114 | ** | 25 | ** | 29 | ** | 48 |

### SPECIFIC CONDUCTANCE (MICROMHCS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 285 | 200 | 394 | 400 | 287 | 384 | 241 | 225 | 344 | 352 | 296 | 543 |
| 2 | 288 | 252 | 390 | 392 | 299 | 394 | 240 | 187 | 350 | 360 | 326 | 567 |
| 3 | 296 | 260 | 402 | 396 | 318 | 407 | 243 | 178 | 365 | 376 | 344 | 550 |
| 4 | 302 | 280 | 408 | 370 | 345 | 389 | 241 | 202 | 375 | 380 | 366 | 542 |
| 5 | 314 | 295 | 402 | 414 | 356 | 387 | 297 | 223 | 388 | 386 | 360 | 537 |
| 6 | 320 | 308 | 386 | 418 | 358 | 412 | 291 | 263 | 386 | 385 | 361 | 509 |
| 7 | 322 | 320 | 400 | 422 | 382 | 427 | 288 | 224 | 390 | 376 | 368 | 478 |
| 8 | 342 | 316 | 410 | 425 | 320 | 423 | 286 | 227 | 368 | 379 | 367 | 454 |
| 9 | 336 | 163 | 416 | 426 | 197 | 429 | 298 | 225 | 275 | 375 | 367 | 431 |
| 10 | 340 | 150 | 430 | 412 | 150 | 433 | 280 | 276 | 221 | 384 | 372 | 402 |
| 11 | 352 | 220 | 444 | 418 | 158 | 428 | 286 | 383 | 260 | 387 | 376 | 398 |
| 12 | 318 | 242 | 425 | 438 | 196 | 407 | 258 | 220 | 310 | 395 | 376 | 437 |
| 13 | 322 | 260 | 288 | 450 | 220 | 386 | 198 | 270 | 345 | 391 | 367 | 473 |
| 14 | 356 | 286 | 270 | 440 | 283 | 432 | 146 | 247 | 344 | 387 | 382 | 540 |
| 15 | 384 | 300 | 300 | 438 | 306 | 426 | 139 | 224 | 355 | 363 | 412 | 571 |
| 16 | 376 | 310 | 320 | 420 | 330 | 360 | 169 | 140 | 356 | 369 | 431 | 569 |
| 17 | 366 | 318 | 350 | 394 | 346 | 127 | 197 | 178 | 360 | 381 | 437 | 569 |
| 18 | 326 | 320 | 372 | 376 | 347 | 230 | 222 | 168 | 362 | 384 | 447 | 565 |
| 19 | 366 | 322 | 378 | 392 | 360 | 333 | 230 | 204 | 360 | 385 | 460 | 561 |
| 20 | 348 | 314 | 392 | 384 | 363 | 287 | 232 | 211 | 352 | 396 | 490 | 533 |
| 21 | 328 | 306 | 404 | 284 | 380 | 243 | 231 | 210 | 227 | 403 | 506 | 432 |
| 22 | 376 | 254 | 342 | 114 | 385 | 253 | 230 | 218 | 208 | 401 | 512 | 449 |
| 23 | 404 | 280 | 288 | 98 | 404 | 292 | 245 | 234 | 180 | 395 | 522 | 448 |
| 24 | 388 | 300 | 248 | 106 | 408 | 274 | 246 | 216 | 224 | 398 | 526 | 452 |
| 25 | 386 | 332 | 260 | 160 | 383 | 288 | 218 | 217 | 247 | 398 | 522 | 470 |
| 26 | 376 | 344 | 256 | 240 | 394 | 277 | 149 | 217 | 286 | 404 | 519 | 477 |
| 27 | 366 | 346 | 290 | 274 | 397 | 265 | 163 | 217 | 313 | 396 | 533 | 494 |
| 28 | 360 | 362 | 320 | 296 | 392 | 235 | 179 | 218 | 341 | 340 | 535 | 456 |
| 29 | 370 | 380 | 338 | 318 | 387 | 286 | 212 | 265 | 354 | 252 | 530 | 450 |
| 30 | 350 | 396 | 356 | 296 | --- | 261 | 222 | 302 | 370 | 264 | 491 | 438 |
| 31 | 175 | --- | 382 | 280 | --- | 262 | --- | 326 | --- | 283 | 517 | --- |
| MEAN | 340 | 291 | 357 | 345 | 326 | 337 | 229 | 230 | 321 | 372 | 433 | 493 |

## 07344500 BIG CYPRESS CREEK NEAR PITTSBURG, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 23.0 | 14.0 | 8.0 | 11.0 | 4.0 | 10.0 | 13.0 | 17.0 | 23.0 | 27.0 | 25.0 | 25.0 |
| 2 | 22.0 | 14.0 | 8.0 | 10.0 | 4.0 | --- | 15.0 | 17.0 | 24.0 | 27.0 | 25.0 | 25.0 |
| 3 | 23.0 | --- | 8.0 | 12.0 | 4.0 | 4.0 | 16.0 | 18.0 | 24.0 | 27.0 | 26.0 | 25.0 |
| 4 | 23.0 | 11.0 | 9.0 | 11.0 | 5.0 | 6.0 | 15.0 | 19.0 | 24.0 | 27.0 | 26.0 | 25.0 |
| 5 | 22.0 | 12.0 | 11.0 | 8.0 | 6.0 | 6.0 | 14.0 | 19.0 | 24.0 | 27.0 | 26.0 | 25.0 |
| 6 | 23.0 | 12.0 | 8.0 | 7.0 | 5.0 | 8.0 | 15.0 | 20.0 | 25.0 | 27.0 | 26.0 | 25.0 |
| 7 | 17.0 | 12.0 | 11.0 | 8.0 | 6.0 | 11.0 | 16.0 | 20.0 | --- | 27.0 | 26.0 | 25.0 |
| 8 | 20.0 | 12.0 | 11.0 | 6.0 | 5.0 | 14.0 | 16.0 | 19.0 | 26.0 | 27.0 | 26.0 | 25.0 |
| 9 | 20.0 | 15.0 | 9.0 | 6.0 | 4.0 | 12.0 | 15.0 | 16.0 | --- | 27.0 | 26.0 | 25.0 |
| 10 | 17.0 | 13.0 | 10.0 | 7.0 | 3.0 | 12.0 | 15.0 | 17.0 | 27.0 | 27.0 | 26.0 | 24.0 |
| 11 | 18.0 | 12.0 | 13.0 | 9.0 | 2.0 | 14.0 | 16.0 | 20.0 | --- | 27.0 | 26.0 | 24.0 |
| 12 | 18.0 | 10.0 | --- | 10.0 | 4.0 | 12.0 | 15.0 | 21.0 | --- | 27.0 | 26.0 | 24.0 |
| 13 | 19.0 | 10.0 | 10.0 | 7.0 | --- | 13.0 | 10.0 | 20.0 | 26.0 | 27.0 | 26.0 | 24.0 |
| 14 | 16.0 | 10.0 | 10.0 | 7.0 | 7.0 | 12.0 | 8.0 | 20.0 | 28.0 | 27.0 | 26.0 | 24.0 |
| 15 | 17.0 | 10.0 | 9.0 | 9.0 | 10.0 | 14.0 | 10.0 | 19.0 | 26.0 | 27.0 | 26.0 | 24.0 |
| 16 | 17.0 | 10.0 | 9.0 | 11.0 | 9.0 | 14.0 | 13.0 | 18.0 | 25.0 | 27.0 | 26.0 | 24.0 |
| 17 | 17.0 | 10.0 | 9.0 | 11.0 | 6.0 | 14.0 | 15.0 | 19.0 | 25.0 | 27.0 | 26.0 | 24.0 |
| 18 | 19.0 | 10.0 | 8.0 | 11.0 | 5.0 | 11.0 | 16.0 | 21.0 | 25.0 | 27.0 | 26.0 | 24.0 |
| 19 | 20.0 | 14.0 | 9.0 | 12.0 | 6.0 | 12.0 | 17.0 | 21.0 | 26.0 | 29.0 | 26.0 | 23.0 |
| 20 | 21.0 | 15.0 | 11.0 | 12.0 | 9.0 | 13.0 | 17.0 | 20.0 | 25.0 | 27.0 | 26.0 | 23.0 |
| 21 | 21.0 | 16.0 | 12.0 | 11.0 | 12.0 | 12.0 | 16.0 | 21.0 | 23.0 | 27.0 | 26.0 | 24.0 |
| 22 | 20.0 | 13.0 | 16.0 | 10.0 | 13.0 | 12.0 | 16.0 | 20.0 | 24.0 | 26.0 | 26.0 | 25.0 |
| 23 | 18.0 | 11.0 | 16.0 | 8.0 | 13.0 | 14.0 | 17.0 | 19.0 | 23.0 | 26.0 | 26.0 | 25.0 |
| 24 | 17.0 | 14.0 | 15.0 | 7.0 | 12.0 | 12.0 | 17.0 | 21.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| 25 | 14.0 | 11.0 | 13.0 | 9.0 | 10.0 | 12.0 | 18.0 | 21.0 | 25.0 | 25.0 | 25.0 | 24.0 |
| 26 | 14.0 | 11.0 | 12.0 | 10.0 | 13.0 | 12.0 | 16.0 | 21.0 | 26.0 | 25.0 | 25.0 | 23.0 |
| 27 | 17.0 | 13.0 | 13.0 | 10.0 | 8.0 | 13.0 | 15.0 | 21.0 | 26.0 | 26.0 | 25.0 | 21.0 |
| 28 | 17.0 | 11.0 | 13.0 | 7.0 | 9.0 | 12.0 | 16.0 | 21.0 | 27.0 | 24.0 | 24.0 | 18.0 |
| 29 | 17.0 | 9.0 | 13.0 | 6.0 | 12.0 | 15.0 | 16.0 | 22.0 | 27.0 | 24.0 | 24.0 | 18.0 |
| 30 | --- | 10.0 | 13.0 | 6.0 | --- | 13.0 | 16.0 | 23.0 | 27.0 | 24.0 | 23.0 | 18.0 |
| 31 | 16.0 | --- | 11.0 | 3.0 | --- | 12.0 | --- | 23.0 | --- | 25.0 | 25.0 | --- |
| MEAN | 19.0 | 12.0 | 11.0 | 9.0 | 7.5 | 11.5 | 15.0 | 20.0 | 25.0 | 26.5 | 25.5 | 23.5 |

## 07345500 ELLISON CREEK RESERVOIR NEAR LONE STAR, TX

**LOCATION.**--Lat 32°55'16", long 94°43'17", Morris County, Hydrologic Unit 11140305, at pumphouse of Lone Star Steel Co., on left bank 1,700 ft (518 m) upstream from Ellison Creek Dam on Ellison Creek, 0.6 mi (1.0 km) upstream from Big Cypress Creek, and 1.4 mi (2.3 km) southwest of Lone Star.

**DRAINAGE AREA.**--37.0 mi² (95.8 km²).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--January 1943 to September 1962 (published as "near Daingerfield"), January 1974 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 22, 1943, staff gage at site just upstream from dam at datum 200 ft (61.0 m) lower.

**REMARKS.**--The reservoir is formed by a rolled earthfill dam 4,000 ft (1,200 m) long, with an uncontrolled concrete spillway 300 ft (91 m) long at the left end of dam. Deliberate impoundment began Jan. 14, 1943, and the dam was completed in April 1943. Another spillway is cut through natural ground near the right end of dam. In addition, there is a relief dam, approximately 125 ft (38 m) long, located near the reservoir pumphouse that can be breached if the other spillways are unable to release sufficient floodwater. There is a 36-inch-diameter (914 mm) conduit through the dam that is used for pumping water from Big Cypress Creek into the reservoir and can also be used to discharge water from the reservoir into Big Cypress Creek. The dam is owned by Lone Star Steel Co. Records furnished by the company show that during the current year, the city of Lone Star diverted 245 acre-ft (302,000 m³) from the reservoir. Area capacity curves are based on a survey made in 1942. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 280.1 | - |
| Design flood | 275.1 | 36,600 |
| Crest of spillway | 273.1 | 33,000 |
| Crest of concrete spillway | 268.1 | 24,700 |
| Lowest gated outlet (invert) | 235.1 | 196 |

**COOPERATION.**--Capacity table, area-capacity curves, and records of diversions were furnished by Lone Star Steel Co.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 31,240 acre-ft (38.5 hm³) Apr. 26, 1958, elevation, 272.11 ft (82.939 m); minimum since lake first filled in May 1944, 15,760 acre-ft (19.4 hm³) Dec. 24, 1975, elevation, 261.28 ft (79.638 m).

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 25,870 acre-ft (31.9 hm³) Jan. 22, elevation, 268.90 ft (81.961 m); minimum, 21,550 acre-ft (26.6 hm³) Sept. 18, elevation, 266.01 ft (81.080 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 266.0 | 21,540 | 268.0 | 24,470 |
| 267.0 | 22,970 | 269.0 | 26,020 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22640 | 24160 | 23590 | 24040 | 24560 | 23120 | 24590 | 24370 | 22910 | 24050 | 23630 | 22460 |
| 2 | 22410 | 24220 | 23680 | 23930 | 24500 | 22970 | 24430 | 24430 | 22880 | 23980 | 23590 | 22420 |
| 3 | 22160 | 23990 | 23740 | 23920 | 24430 | 22840 | 24380 | 24380 | 22880 | 23930 | 23560 | 22370 |
| 4 | 22020 | 23770 | 23830 | 23870 | 24350 | 22850 | 24260 | 24290 | 22880 | 23900 | 23510 | 22300 |
| 5 | 22020 | 23630 | 23890 | 23800 | 24290 | 22910 | 24160 | 24170 | 22880 | 23860 | 23500 | 22230 |
| 6 | 22040 | 23710 | 23930 | 23720 | 24220 | 22960 | 24040 | 24100 | 22870 | 23830 | 23470 | 22160 |
| 7 | 22060 | 23780 | 23980 | 23660 | 24160 | 23050 | 23920 | 24220 | 22880 | 23830 | 23420 | 22130 |
| 8 | 22070 | 23870 | 24020 | 23590 | 24800 | 22990 | 23780 | 24250 | 23240 | 23830 | 23420 | 22090 |
| 9 | 22130 | 24630 | 24050 | 23540 | 25180 | 23240 | 23630 | 24130 | 23600 | 23830 | 23390 | 22090 |
| 10 | 22130 | 24720 | 24100 | 23450 | 25090 | 23330 | 23440 | 24020 | 23660 | 23830 | 23380 | 22040 |
| 11 | 22160 | 24660 | 24170 | 23360 | 24900 | 23410 | 23570 | 23920 | 23690 | 23830 | 23360 | 22020 |
| 12 | 22160 | 24550 | 24530 | 23210 | 24780 | 23900 | 23770 | 23930 | 23720 | 23810 | 23350 | 21960 |
| 13 | 22130 | 24440 | 24630 | 23080 | 24670 | 24050 | 25120 | 23900 | 23720 | 23800 | 23320 | 21900 |
| 14 | 22100 | 24340 | 24550 | 22970 | 24580 | 24110 | 25210 | 23770 | 23690 | 23800 | 23260 | 21900 |
| 15 | 22040 | 24230 | 24470 | 22880 | 24530 | 24190 | 24970 | 24020 | 23660 | 23800 | 23230 | 21880 |
| 16 | 22040 | 24110 | 24370 | 22880 | 24410 | 25060 | 24730 | 24470 | 23650 | 23780 | 23180 | 21790 |
| 17 | 22200 | 23980 | 24230 | 22880 | 24350 | 25150 | 24610 | 24530 | 23720 | 23740 | 23150 | 21710 |
| 18 | 22300 | 23870 | 24140 | 22990 | 24290 | 24890 | 24500 | 24470 | 23710 | 23660 | 23110 | 21820 |
| 19 | 22320 | 23780 | 24040 | 23170 | 24200 | 24730 | 24400 | 24490 | 23680 | 23620 | 23030 | 21810 |
| 20 | 22380 | 23630 | 23950 | 23590 | 24110 | 24660 | 24290 | 24380 | 23930 | 23570 | 22990 | 21790 |
| 21 | 22480 | 23930 | 23840 | 24170 | 24040 | 24560 | 24160 | 24310 | 23980 | 23570 | 22940 | 21760 |
| 22 | 22690 | 23960 | 24050 | 25870 | 23960 | 24470 | 24040 | 24200 | 24190 | 23570 | 22910 | 21780 |
| 23 | 22720 | 23960 | 24500 | 25380 | 23870 | 24460 | 23860 | 24070 | 24230 | 23570 | 22870 | 21780 |
| 24 | 22790 | 23920 | 24690 | 25070 | 23800 | 24440 | 23680 | 23930 | 24250 | 23560 | 22810 | 21820 |
| 25 | 22870 | 23810 | 24670 | 24900 | 23690 | 24370 | 25210 | 23810 | 24250 | 23540 | 22750 | 21810 |
| 26 | 22910 | 23710 | 24590 | 24810 | 23560 | 24280 | 25230 | 23690 | 24250 | 23500 | 22640 | 21740 |
| 27 | 22960 | 23620 | 24530 | 24730 | 23420 | 24260 | 24950 | 23510 | 24230 | 23680 | 22580 | 21720 |
| 28 | 23030 | 23450 | 24430 | 24690 | 23330 | 24320 | 24750 | 23300 | 24140 | 23680 | 22580 | 21720 |
| 29 | 23110 | 23420 | 24370 | 24690 | 23230 | 24550 | 24590 | 23110 | 24080 | 23680 | 22570 | 21820 |
| 30 | 23570 | 23510 | 24260 | 24690 | --- | 24610 | 24470 | 23000 | 24080 | 23680 | 22540 | 22210 |
| 31 | 24020 | --- | 24140 | 24610 | --- | 24590 | --- | 22940 | --- | 23660 | 22480 | --- |
| MAX | 24020 | 24720 | 24690 | 25870 | 25180 | 25150 | 25230 | 24530 | 24250 | 24050 | 23630 | 22460 |
| MIN | 22020 | 23420 | 23590 | 22880 | 23230 | 22840 | 23440 | 22940 | 22870 | 23500 | 22480 | 21710 |
| (†) | 267.70 | 267.36 | 267.78 | 268.09 | 267.17 | 268.08 | 268.00 | 266.98 | 267.74 | 267.46 | 266.67 | 266.48 |
| (‡) | +1090 | -510 | +630 | +470 | +1380 | -1360 | -120 | -1530 | +1140 | -420 | -1180 | -270 |
| (††) | 10440 | 13990 | 14610 | 14930 | 13600 | 15300 | 14300 | 14220 | 15860 | 18010 | 16720 | 15150 |

CAL YR 1979 MAX 25680 MIN 22020 ‡ +490 †† 125200
WTR YR 1980 MAX 25870 MIN 21710 ‡ -720 †† 177100

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for industrial use by Lone Star Steel Co.

## 07345500 ELLISON CREEK RESERVOIR NEAR LONE STAR, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| SEP | | | | | | | | | |
| 10... | 1115 | 360 | 30.0 | 100 | 68 | 32 | 5.4 | 20 | .9 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| SEP | | | | | | | | |
| 10... | 10 | 42 | 0 | 78 | 34 | 1.1 | .4 | 202 |

## 07345900 LAKE O' THE PINES NEAR JEFFERSON, TX

LOCATION.--Lat 32°45'04", long 94°29'59", Marion County, Hydrologic Unit 11140305, on left bank 1,500 ft (457 m) upstream from left end of Ferrell's Bridge Dam on Big Cypress Creek, on Farm Road 726, 9.0 mi (14.5 km) west of Jefferson, and 80.1 mi (128.9 km) upstream from mouth.

DRAINAGE AREA.--850 mi² (2,202 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Nov. 12, 1957, nonrecording gage at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 10,600 ft (3,230 m) long, including a 200-foot (61 m) concrete spillway. Impoundment of water began Aug. 21, 1957, and the dam was completed June 25, 1958. Official operation began Dec. 11, 1959. The flood-control outlet works consist of two 10.0-foot-diameter (3.0 m) conduits that are controlled by two 8.0- by 12.5-foot (2.4 by 3.8 m) electrically driven broome-type gates. The low-flow outlet works consist of one controlled 14-inch (356 mm) pipe. Flow over the spillway is discharged into a 2,000-foot (610 m) channel and then into Cypress Creek. The capacity table is based on a survey made in 1950. The lake was built for flood control, conservation, and water supply. During the current year, 870 acre-ft (1.07 hm³) was diverted from lake for municipal use and 3,830 acre-ft (4.72 hm³) was diverted by Southwestern Electric Power Co. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 277.0 | - |
| Crest of spillway | 249.5 | 842,100 |
| Top of conservation pool | 228.5 | 254,900 |
| Crest of intake to wet well (14 in) | 202.5 | 5,760 |
| Lowest gated outlet (invert) | 200.0 | 2,860 |

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 694,360 acre-ft (856 hm³) May 5, 1966, elevation, 245.41 ft (74.801 m); minimum since December 1959, 219,700 acre-ft (271 hm³) Nov. 16, 1963, elevation, 226.54 ft (69.049 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 331,200 acre-ft (408 hm³) Feb. 1 at 0001 hours, elevation, 232.29 ft (70.802 m); minimum, 249,500 acre-ft (308 hm³) Sept. 28 at 0800 hours, elevation, 228.21 ft (69.558 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 228.0 | 245,600 | 232.0 | 324,800 |
| 230.0 | 283,700 | 234.0 | 348,800 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 0700

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 289600 | 259700 | 255400 | 256900 | 329100 | 255800 | 263700 | 268500 | 283500 | 283500 | 270400 | 256300 |
| 2 | 283700 | 260100 | 254800 | 256500 | 325600 | 254800 | 264300 | 268500 | 283500 | 283300 | 269900 | 256300 |
| 3 | 279000 | 259700 | 254800 | 257300 | 321600 | 255200 | 264700 | 265600 | 283300 | 282300 | 269100 | 256300 |
| 4 | 272100 | 259000 | 254800 | 257100 | 316300 | 255400 | 263900 | 264500 | 283300 | 282300 | 268100 | 255200 |
| 5 | 266200 | 258800 | 254800 | 256500 | 313200 | 255600 | 262800 | 263900 | 283100 | 282100 | 268100 | 255000 |
| 6 | 262200 | 257800 | 255600 | 255400 | 307100 | 256000 | 261400 | 264500 | 282700 | 281700 | 267700 | 254500 |
| 7 | 259200 | 256700 | 255800 | 256500 | 303400 | 256300 | 260700 | 264300 | 282700 | 281500 | 267700 | 254300 |
| 8 | 256900 | 255400 | 255400 | 256700 | 304500 | 256500 | 259200 | 262800 | 286100 | 281300 | 267300 | 253900 |
| 9 | 256000 | 257300 | 255600 | 257100 | 304500 | 256700 | 256900 | 260900 | 286100 | 280100 | 266800 | 253500 |
| 10 | 254800 | 257100 | 255800 | 258000 | 303800 | 257800 | 256300 | 260100 | 286300 | 279500 | 266200 | 253000 |
| 11 | 254500 | 257800 | 257700 | 258000 | 304700 | 257500 | 257700 | 259200 | 287900 | 279300 | 266200 | 252800 |
| 12 | 254500 | 259000 | 259000 | 256700 | 304700 | 257700 | 258600 | 262600 | 287700 | 278800 | 265600 | 252100 |
| 13 | 253400 | 259200 | 259000 | 256900 | 303400 | 258600 | 264800 | 264300 | 288100 | 278400 | 265000 | 251900 |
| 14 | 253500 | 258400 | 258800 | 256500 | 301600 | 258400 | 267700 | 265200 | 287500 | 277800 | 264700 | 251300 |
| 15 | 253400 | 257100 | 258600 | 256700 | 299700 | 257700 | 271800 | 269100 | 287100 | 276600 | 264300 | 251100 |
| 16 | 253400 | 256500 | 258600 | 256500 | 295300 | 260500 | 273700 | 273300 | 286700 | 276200 | 263900 | 250200 |
| 17 | 254800 | 255600 | 257100 | 256300 | 289600 | 261600 | 274300 | 275400 | 286100 | 275400 | 263300 | 250000 |
| 18 | 254800 | 255800 | 256500 | 256000 | 284900 | 263300 | 273700 | 282000 | 285700 | 275200 | 262800 | 251700 |
| 19 | 254800 | 256200 | 256700 | 256900 | 280900 | 265000 | 272100 | 286100 | 285500 | 274700 | 262400 | 251700 |
| 20 | 254700 | 255800 | 256700 | 258600 | 275800 | 266200 | 269200 | 290000 | 285900 | 275100 | 262000 | 251900 |
| 21 | 254800 | 257700 | 257700 | 262200 | 271400 | 264700 | 266200 | 292100 | 286100 | 274700 | 261200 | 251300 |
| 22 | 256300 | 260100 | 260900 | 276800 | 266200 | 262200 | 262400 | 293500 | 286700 | 273900 | 260300 | 251300 |
| 23 | 256000 | 260100 | 266200 | 289600 | 262200 | 262400 | 259200 | 293700 | 286900 | 273700 | 259500 | 251100 |
| 24 | 255600 | 260900 | 266200 | 306100 | 259200 | 259200 | 257700 | 293300 | 287300 | 272300 | 259000 | 250900 |
| 25 | 255600 | 262400 | 266000 | 314800 | 257100 | 256700 | 262400 | 293300 | 287300 | 271900 | 258600 | 250600 |
| 26 | 255200 | 260900 | 265200 | 320500 | 256000 | 255200 | 264300 | 292100 | 286700 | 271600 | 258200 | 250000 |
| 27 | 255200 | 260500 | 264500 | 323900 | 255600 | 256000 | 268500 | 290000 | 286300 | 272100 | 258600 | 250000 |
| 28 | 255200 | 25[illegible]500 | 263300 | 326700 | 255200 | 256700 | 272500 | 288700 | 285700 | 271900 | 258000 | 249800 |
| 29 | 254800 | 257100 | 262400 | 328800 | 255200 | 260700 | 273300 | 286900 | 284900 | 271600 | 257500 | 253400 |
| 30 | 259000 | 256000 | 260300 | 330800 | --- | 261800 | 271200 | 285500 | 284100 | 271400 | 256900 | 253400 |
| 31 | 260100 | --- | 258600 | 331000 | --- | 262400 | --- | 284100 | --- | 270600 | 256500 | --- |
| MAX | 289600 | 262400 | 266200 | 331000 | 329100 | 266200 | 274300 | 293700 | 288100 | 283500 | 270400 | 256300 |
| MIN | 253400 | 255400 | 254800 | 255400 | 255200 | 254800 | 256300 | 259200 | 282700 | 270600 | 256500 | 249800 |
| (†) | 228.78 | 228.56 | 228.70 | 232.29 | 228.52 | 228.90 | 229.36 | 230.02 | 230.02 | 229.33 | 228.59 | 228.42 |
| (‡) | -35800 | -4100 | +2600 | +72400 | -75800 | +7200 | +8800 | +12900 | 0 | -13500 | -14100 | -3100 |
| (††) | 64 | 59 | 58 | 63 | 57 | 72 | 58 | 60 | 73 | 815 | 1465 | 1855 |

CAL YR 1979 MAX 308800 MIN 241100 ‡ +20200 †† 1010
WTR YR 1980 MAX 331000 MIN 249800 ‡ -42500 †† 4700

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal and industrial use.

## 07345900 LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1969 to current year.

### 324509094303901 LAKE O'THE PINES SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 06... | 1320 | 1.0 | 110 | 6.6 | 8.5 | 10.8 | 92 |
| 06... | 1321 | 10 | 110 | 6.6 | 8.5 | 10.7 | 91 |
| 06... | 1322 | 20 | 110 | 6.6 | 8.0 | 10.7 | 90 |
| 06... | 1323 | 31 | 110 | 6.6 | 8.0 | 10.6 | 89 |
| MAY | | | | | | | |
| 29... | 0955 | 1.0 | 128 | 6.5 | 25.5 | 7.8 | 95 |
| 29... | 0956 | 10 | 128 | 6.0 | 23.0 | 4.9 | 57 |
| 29... | 0957 | 20 | 128 | 5.9 | 21.5 | 3.8 | 43 |
| 29... | 0958 | 27 | 137 | 6.0 | 19.5 | 1.0 | 11 |
| AUG | | | | | | | |
| 13... | 1055 | 1.0 | 122 | 7.0 | 31.5 | 7.3 | 99 |
| 13... | 1057 | 10 | 122 | 6.5 | 30.5 | 6.8 | 91 |
| 13... | 1059 | 20 | 122 | 5.9 | 28.5 | 1.0 | 13 |
| 13... | 1101 | 28 | 146 | 6.6 | 24.0 | .2 | 2 |

### 324518094300801 LAKE O'THE PINES SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | | |
| 06... | 1300 | 1.0 | 110 | 6.6 | 8.5 | 2.10 | 10.8 | 92 | 21 | 14 |
| 06... | 1302 | 10 | 110 | 6.5 | 8.5 | -- | 10.7 | 91 | -- | -- |
| 06... | 1303 | 20 | 110 | 6.4 | 8.0 | -- | 10.6 | 89 | -- | -- |
| 06... | 1304 | 30 | 110 | 6.3 | 8.0 | -- | 10.5 | 88 | -- | -- |
| 06... | 1305 | 40 | 110 | 6.3 | 8.0 | -- | 10.5 | 88 | -- | -- |
| 06... | 1306 | 48 | 110 | 6.3 | 8.0 | -- | 10.4 | 87 | 21 | 14 |
| MAY | | | | | | | | | | |
| 29... | 0900 | 1.0 | 128 | 6.5 | 25.5 | 1.80 | 7.9 | 96 | 28 | 20 |
| 29... | 0902 | 10 | 128 | 5.9 | 22.5 | -- | 4.9 | 57 | -- | -- |
| 29... | 0903 | 20 | 128 | 5.9 | 21.5 | -- | 4.0 | 45 | -- | -- |
| 29... | 0904 | 25 | 131 | 5.9 | 20.5 | -- | 2.0 | 22 | -- | -- |
| 29... | 0905 | 30 | 136 | 6.0 | 19.5 | -- | .9 | 10 | -- | -- |
| 29... | 0906 | 40 | 142 | 6.1 | 19.0 | -- | .3 | 3 | -- | -- |
| 29... | 0907 | 48 | 145 | 6.1 | 18.5 | -- | .2 | 2 | 30 | 12 |
| AUG | | | | | | | | | | |
| 13... | 1025 | 1.0 | 122 | 6.8 | 31.5 | 1.70 | 7.3 | 99 | 23 | 15 |
| 13... | 1027 | 10 | 122 | 6.5 | 30.5 | -- | 6.9 | 92 | -- | -- |
| 13... | 1029 | 15 | 122 | 6.0 | 29.0 | -- | 4.6 | 60 | -- | -- |
| 13... | 1031 | 20 | 122 | 5.8 | 28.0 | -- | .6 | 8 | -- | -- |
| 13... | 1033 | 30 | 151 | 6.7 | 23.0 | -- | .2 | 2 | -- | -- |
| 13... | 1037 | 40 | 161 | 6.8 | 22.0 | -- | .2 | 2 | -- | -- |
| 13... | 1039 | 45 | 161 | 6.8 | 22.0 | -- | .2 | 2 | 34 | 1 |

## 324518094300801 LAKE O'THE PINES SITE AC--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 06... | 3.8 | 2.7 | 10 | 1.0 | 4.1 | 8 | 0 | 22 | 14 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | 3.8 | 2.7 | 9.9 | 1.0 | 4.1 | 8 | 0 | 24 | 14 |
| MAY | | | | | | | | | |
| 29... | 6.0 | 3.1 | 10 | .8 | 3.5 | 10 | 0 | 25 | 14 |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | 6.7 | 3.1 | 10 | .8 | 3.6 | 22 | 0 | 25 | 12 |
| AUG | | | | | | | | | |
| 13... | 4.1 | 3.2 | 11 | 1.0 | 3.8 | 10 | 0 | 23 | 15 |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | 7.7 | 3.5 | 11 | .8 | 3.8 | 58 | 0 | 35 | 14 |

| DATE | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | IRON, DIS-SOLVED (UG/L AS FE) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 06... | .2 | 6.8 | 68 | .06 | .45 | .51 | .010 | 30 | 3 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | .07 | .42 | .49 | .010 | 50 | 20 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | 6.8 | 69 | .07 | .41 | .48 | .010 | 50 | 20 |
| MAY | | | | | | | | | |
| 29... | .1 | 8.6 | 75 | .11 | .42 | .53 | .020 | 80 | 40 |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | .13 | .23 | .36 | .020 | 80 | 450 |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | .14 | .44 | .58 | .020 | 100 | 1800 |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | 11 | 86 | .06 | .63 | .69 | .020 | 70 | 3700 |
| AUG | | | | | | | | | |
| 13... | .2 | 11 | 76 | .00 | 1.1 | 1.1 | .020 | <10 | 8 |
| 13... | -- | -- | -- | .00 | .45 | .45 | .020 | 10 | 20 |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | -- | -- | .00 | .71 | .71 | .030 | 80 | 630 |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | 16 | 124 | .00 | 2.0 | 2.0 | .200 | 5800 | 6900 |

## LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

### 324613094323001 LAKE O'THE PINES SITE BC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 06... | 1330 | 1.0 | 118 | 6.6 | 8.5 | 1.80 | 10.8 |
| 06... | 1331 | 10 | 118 | 6.6 | 8.0 | -- | 10.8 |
| 06... | 1332 | 20 | 118 | 6.6 | 8.0 | -- | 10.8 |
| 06... | 1333 | 30 | 115 | 6.6 | 8.0 | -- | 10.8 |
| 06... | 1334 | 41 | 113 | 6.6 | 8.0 | -- | 10.7 |
| MAY | | | | | | | |
| 29... | 1015 | 1.0 | 126 | 6.7 | 26.5 | 2.01 | 7.8 |
| 29... | 1016 | 10 | 126 | 6.4 | 26.0 | -- | 7.4 |
| 29... | 1017 | 20 | 130 | 5.9 | 21.0 | -- | 2.7 |
| 29... | 1018 | 30 | 135 | 6.0 | 20.0 | -- | 1.2 |
| 29... | 1019 | 40 | 141 | 6.1 | 19.0 | -- | .4 |
| AUG | | | | | | | |
| 13... | 1120 | 1.0 | 120 | 7.2 | 31.0 | 1.60 | 7.4 |
| 13... | 1122 | 10 | 120 | 6.7 | 30.0 | -- | 7.1 |
| 13... | 1124 | 15 | 120 | 6.4 | 30.0 | -- | 6.7 |
| 13... | 1126 | 20 | 125 | 5.9 | 28.0 | -- | .1 |
| 13... | 1128 | 30 | 160 | 6.8 | 23.0 | -- | .1 |
| 13... | 1130 | 40 | 179 | 7.0 | 21.5 | -- | .1 |
| 13... | 1132 | 44 | 181 | 7.0 | 21.5 | -- | .1 |

| DATE | OXYGEN, DISSOLVED (PERCENT SATURATION) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 06... | 92 | .10 | .42 | .52 | .010 | 60 | 10 |
| 06... | 91 | -- | -- | -- | -- | -- | -- |
| 06... | 91 | .10 | .42 | .52 | .010 | 60 | 10 |
| 06... | 91 | -- | -- | -- | -- | -- | -- |
| 06... | 90 | .08 | .38 | .46 | .010 | 60 | 10 |
| MAY | | | | | | | |
| 29... | 98 | .08 | 2.0 | 2.1 | .020 | 90 | 50 |
| 29... | 91 | -- | -- | -- | -- | -- | -- |
| 29... | 30 | .13 | 2.4 | 2.5 | .020 | 80 | 340 |
| 29... | 13 | .11 | .21 | .32 | .020 | 80 | 1200 |
| 29... | 4 | .13 | 1.9 | 2.0 | .020 | 100 | 2200 |
| AUG | | | | | | | |
| 13... | 99 | .00 | .47 | .47 | .020 | 10 | 0 |
| 13... | 95 | .00 | .62 | .62 | .020 | 20 | 30 |
| 13... | 89 | -- | -- | -- | -- | -- | -- |
| 13... | 1 | .00 | .56 | .56 | .020 | 50 | 1600 |
| 13... | 1 | -- | -- | -- | -- | -- | -- |
| 13... | 1 | -- | -- | -- | -- | -- | -- |
| 13... | 1 | .00 | 2.3 | 2.3 | .380 | 9100 | 6800 |

### 324738094325101 LAKE O'THE PINES SITE CC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 06... | 1355 | 1.0 | 105 | 6.4 | 8.5 | 10.0 | 85 |
| 06... | 1356 | 10 | 108 | 6.4 | 8.0 | 10.1 | 85 |
| 06... | 1357 | 20 | 108 | 6.4 | 8.0 | 10.0 | 84 |
| 06... | 1358 | 24 | 108 | 6.4 | 8.0 | 10.0 | 84 |
| MAY | | | | | | | |
| 29... | 1040 | 1.0 | 128 | 7.0 | 28.0 | 8.0 | 103 |
| 29... | 1041 | 10 | 128 | 6.8 | 27.0 | 7.8 | 98 |
| 29... | 1042 | 15 | 128 | 6.0 | 24.0 | 3.9 | 46 |
| 29... | 1043 | 21 | 138 | 6.1 | 22.0 | .2 | 2 |
| AUG | | | | | | | |
| 13... | 1150 | 1.0 | 122 | 7.1 | 31.5 | 7.4 | 100 |
| 13... | 1152 | 10 | 122 | 6.4 | 31.0 | 6.3 | 84 |
| 13... | 1154 | 15 | 122 | 5.8 | 29.5 | .1 | 1 |
| 13... | 1156 | 20 | 130 | 5.8 | 29.0 | .1 | 1 |

## LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

### 324806094350001 LAKE O'THE PINES SITE DC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 06... | 1435 | 1.0 | 66 | 6.1 | 8.0 | 9.5 | 80 |
| 06... | 1436 | 10 | 87 | 6.3 | 7.5 | 9.7 | 81 |
| 06... | 1437 | 17 | 98 | 6.3 | 7.5 | 9.7 | 81 |
| MAY | | | | | | | |
| 29... | 1135 | 1.0 | 123 | 6.6 | 28.0 | 7.7 | 99 |
| 29... | 1136 | 10 | 123 | 6.4 | 27.5 | 7.3 | 92 |
| 29... | 1137 | 15 | 89 | 5.8 | 24.5 | 2.2 | 26 |
| 29... | 1138 | 22 | 98 | 5.8 | 23.5 | .7 | 8 |
| AUG | | | | | | | |
| 13... | 1250 | 1.0 | 120 | 6.6 | 31.5 | 6.9 | 93 |
| 13... | 1252 | 10 | 120 | 6.0 | 30.5 | 4.8 | 64 |
| 13... | 1254 | 15 | 123 | 5.8 | 29.5 | .2 | 3 |
| 13... | 1256 | 20 | 123 | 5.8 | 29.5 | .1 | 1 |
| 13... | 1258 | 23 | 123 | 5.8 | 29.5 | .1 | 1 |

### 324726094363801 LAKE O'THE PINES SITE EC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 06... | 1410 | 1.0 | 145 | 6.7 | 8.0 | 1.70 | 10.6 | 89 | 32 |
| 06... | 1411 | 10 | 146 | 6.7 | 7.5 | -- | 10.5 | 88 | -- |
| 06... | 1412 | 20 | 146 | 6.7 | 7.5 | -- | 10.5 | 88 | -- |
| 06... | 1413 | 33 | 146 | 6.7 | 7.5 | -- | 10.4 | 87 | 32 |
| MAY | | | | | | | | | |
| 29... | 1100 | 1.0 | 128 | 6.8 | 27.5 | 1.77 | 7.8 | 99 | 29 |
| 29... | 1101 | 10 | 128 | 6.7 | 27.0 | -- | 7.6 | 95 | -- |
| 29... | 1102 | 15 | 128 | 6.3 | 27.0 | -- | 5.9 | 74 | -- |
| 29... | 1103 | 20 | 133 | 5.8 | 23.0 | -- | 1.4 | 16 | -- |
| 29... | 1104 | 25 | 135 | 5.9 | 22.0 | -- | .8 | 9 | -- |
| 29... | 1105 | 29 | 142 | 6.1 | 20.5 | -- | .2 | 2 | 31 |
| AUG | | | | | | | | | |
| 13... | 1220 | 1.0 | 118 | 6.7 | 32.0 | 1.70 | 7.5 | 103 | 21 |
| 13... | 1222 | 10 | 118 | 6.3 | 30.5 | -- | 6.7 | 89 | -- |
| 13... | 1224 | 15 | 118 | 5.7 | 29.5 | -- | 1.9 | 25 | -- |
| 13... | 1226 | 20 | 118 | 5.7 | 29.0 | -- | .1 | 1 | -- |
| 13... | 1228 | 29 | 170 | 7.0 | 23.0 | -- | .1 | 1 | 36 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 06... | 22 | 7.3 | 3.3 | 12 | .9 | 4.4 | 12 | 0 | 30 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | 22 | 7.5 | 3.3 | 12 | .9 | 4.4 | 12 | 0 | 32 |
| MAY | | | | | | | | | |
| 29... | 19 | 6.0 | 3.3 | 9.7 | .8 | 3.7 | 12 | 0 | 24 |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | 15 | 6.9 | 3.4 | 11 | .9 | 3.8 | 20 | 0 | 25 |
| AUG | | | | | | | | | |
| 13... | 16 | 2.8 | 3.3 | 11 | 1.1 | 3.9 | 6 | 0 | 23 |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | 0 | 8.2 | 3.8 | 13 | .9 | 3.9 | 69 | 0 | 4.4 |

## LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

### 324726094363801 LAKE O'THE PINES SITE EC--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 06... | 16 | 9.8 | 89 | .24 | .52 | .76 | .020 | 200 | 40 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | 16 | 10 | 91 | .25 | .49 | .74 | .020 | 220 | 40 |
| MAY | | | | | | | | | |
| 29... | 13 | 8.5 | 74 | .06 | .87 | .93 | .020 | 110 | 30 |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | .11 | 2.1 | 2.2 | .030 | 180 | 830 |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | 13 | 11 | 86 | .06 | 2.0 | 2.1 | .030 | 180 | 1600 |
| AUG | | | | | | | | | |
| 13... | 16 | 12 | 75 | .00 | .58 | .58 | .030 | 20 | 20 |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | -- | -- | .00 | .65 | .65 | .050 | 170 | 1200 |
| 13... | 15 | 17 | 117 | .00 | 2.7 | 2.7 | .210 | 11000 | 6900 |

### 325100094420301 LAKE O'THE PINES SITE FC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 06... | 1600 | 1.0 | 150 | 6.7 | 7.0 | .70 | 9.8 | 81 | 38 |
| 06... | 1602 | 10 | 150 | 6.7 | 7.0 | -- | 9.7 | 80 | -- |
| 06... | 1603 | 24 | 148 | 6.6 | 6.5 | -- | 9.6 | 78 | 37 |
| MAY | | | | | | | | | |
| 29... | 1340 | 1.0 | 178 | 6.8 | 27.5 | .91 | 7.4 | 94 | 48 |
| 29... | 1342 | 10 | 191 | 6.3 | 26.0 | -- | 3.9 | 48 | -- |
| 29... | 1343 | 15 | 195 | 6.3 | 25.0 | -- | 1.7 | 20 | -- |
| 29... | 1344 | 22 | 195 | 6.2 | 25.0 | -- | .7 | 8 | 52 |
| AUG | | | | | | | | | |
| 13... | 1430 | 1.0 | 126 | 6.0 | 32.5 | .90 | 6.3 | 88 | 21 |
| 13... | 1432 | 10 | 147 | 6.2 | 30.5 | -- | 1.9 | 25 | -- |
| 13... | 1434 | 15 | 164 | 6.3 | 30.0 | -- | .1 | 1 | -- |
| 13... | 1436 | 20 | 173 | 6.5 | 30.0 | -- | .1 | 1 | 38 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 06... | 22 | 9.7 | 3.3 | 11 | .8 | 4.3 | 20 | 0 | 31 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | 21 | 9.4 | 3.4 | 11 | .8 | 4.2 | 19 | 0 | 31 |
| MAY | | | | | | | | | |
| 29... | 19 | 12 | 4.4 | 13 | .8 | 4.3 | 36 | 0 | 26 |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | 17 | 13 | 4.7 | 13 | .8 | 4.5 | 42 | 0 | 26 |
| AUG | | | | | | | | | |
| 13... | 15 | 2.8 | 3.5 | 13 | 1.2 | 4.3 | 8 | 0 | 20 |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | 3 | 8.1 | 4.3 | 17 | 1.2 | 4.5 | 43 | 0 | 19 |

## LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

### 325100094420301 LAKE O'THE PINES SITE FC--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 06... | 14 | 12 | 96 | .29 | .59 | .88 | .060 | 310 | 70 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | 14 | 13 | 96 | .26 | .84 | 1.1 | .060 | 310 | 70 |
| MAY | | | | | | | | | |
| 29... | 16 | 8.2 | 102 | .04 | 2.7 | 2.7 | .070 | 280 | 30 |
| 29... | -- | -- | -- | .09 | 2.1 | 2.2 | .070 | 370 | 150 |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | 17 | 9.5 | 109 | .09 | .90 | .99 | .080 | 420 | 630 |
| AUG | | | | | | | | | |
| 13... | 19 | 16 | 83 | .00 | .90 | .90 | .070 | 80 | 70 |
| 13... | -- | -- | -- | .00 | .85 | .85 | .070 | 100 | 60 |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | 20 | 17 | 114 | .00 | 1.3 | 1.3 | .120 | 1200 | 1400 |

### 324518094300801 LAKE O'THE PINES SITE AC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | ARSENIC DISSOLVED (UG/L AS AS) | BARIUM, DISSOLVED (UG/L AS BA) | CADMIUM DISSOLVED (UG/L AS CD) | CHROMIUM, DISSOLVED (UG/L AS CR) | COPPER, DISSOLVED (UG/L AS CU) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 06... | 1300 | 1.0 | 0 | 50 | <1 | 0 | 0 |
| 06... | 1303 | 20 | -- | -- | -- | -- | -- |
| 06... | 1306 | 48 | 0 | 50 | <1 | 0 | 0 |
| MAY | | | | | | | |
| 29... | 0900 | 1.0 | 1 | 60 | <1 | 0 | 2 |
| 29... | 0903 | 20 | -- | -- | -- | -- | -- |
| 29... | 0905 | 30 | -- | -- | -- | -- | -- |
| 29... | 0907 | 48 | 1 | 100 | <1 | 0 | 2 |
| AUG | | | | | | | |
| 13... | 1025 | 1.0 | 1 | 40 | <1 | 10 | 1 |
| 13... | 1027 | 10 | -- | -- | -- | -- | -- |
| 13... | 1031 | 20 | -- | -- | -- | -- | -- |
| 13... | 1039 | 45 | 6 | 200 | 1 | 10 | 1 |

| DATE | IRON, DISSOLVED (UG/L AS FE) | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY DISSOLVED (UG/L AS HG) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 06... | 30 | 0 | 3 | .0 | 0 | 0 | <3 |
| 06... | 50 | -- | 20 | -- | -- | -- | -- |
| 06... | 50 | 0 | 20 | .0 | 0 | 0 | 4 |
| MAY | | | | | | | |
| 29... | 80 | 5 | 40 | .0 | 0 | 0 | <3 |
| 29... | 80 | -- | 450 | -- | -- | -- | -- |
| 29... | 100 | -- | 1800 | -- | -- | -- | -- |
| 29... | 70 | 2 | 3700 | .1 | 0 | 0 | 20 |
| AUG | | | | | | | |
| 13... | <10 | 4 | 8 | .0 | 0 | 0 | <3 |
| 13... | 10 | -- | 20 | -- | -- | -- | -- |
| 13... | 80 | -- | 630 | -- | -- | -- | -- |
| 13... | 5800 | 4 | 6900 | .1 | 0 | 0 | <3 |

## 324518094300801 LAKE O'THE PINES SITE AC

## PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| DATE | FEB 6,80 | MAY 29,80 | AUG 13,80 |
|---|---|---|---|
| TIME | 1301 | 0901 | 1026 |
| TOTAL CELLS/ML | 210000 | 11000 | 820 |
| DIVERSITY: DIVISION | 0.3 | 1.3 | 0.9 |
| .CLASS | 0.3 | 1.3 | 0.9 |
| ..ORDER | 0.5 | 2.2 | 1.5 |
| ...FAMILY | 0.5 | 2.6 | 1.9 |
| ....GENUS | 0.5 | 2.8 | 1.9 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...COELASTRACEAE | | | | | | |
| ....COELASTRUM | -- | - | 370 | 3 | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 1300 | 1 | 140 | 1 | 270# | 33 |
| ....CHLORELLA | 7200 | 3 | -- | - | -- | - |
| ....DICTYOSPHAERIUM | -- | - | 430 | 4 | -- | - |
| ....KIRCHNERIELLA | * | 0 | * | 0 | -- | - |
| ....OOCYSTIS | -- | - | 270 | 3 | -- | - |
| ....TREUBARIA | -- | - | * | 0 | -- | - |
| ...SCENEDESMACEAE | | | | | | |
| ....SCENEDESMUS | * | 0 | 370 | 3 | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | 160 | 2 | -- | - |
| ..ZYGNEMATALES | | | | | | |
| ...DESMIDIACEAE | | | | | | |
| ....EUASTRUM | -- | - | * | 0 | -- | - |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | * | 0 | 430 | 4 | 140# | 17 |
| ....MELOSIRA | 1700 | 1 | 270 | 3 | -- | - |
| ..PENNALES | | | | | | |
| ...FRAGILARIACEAE | | | | | | |
| ....SYNEDRA | * | 0 | 110 | 1 | -- | - |
| ...NAVICULACEAE | | | | | | |
| ....NAVICULA | -- | - | * | 0 | 140# | 17 |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | -- | - | -- | - | 270# | 33 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | | | |
| ....CHROOMONAS | -- | - | 500 | 5 | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....ANACYSTIS | 200000# | 93 | 3500# | 33 | -- | - |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....APHANIZOMENON | -- | - | 3500# | 33 | -- | - |
| ...OSCILLATORIACEAE | | | | | | |
| ....OSCILLATORIA | 1200 | 1 | 480 | 5 | -- | - |
| ....SCHIZOTHRIX | 3400 | 2 | -- | - | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

### 325100094420301 LAKE O'THE PINES SITE FC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| DATE<br>TIME | FEB 6,80<br>1601 | MAY 29,80<br>1341 | AUG 13,80<br>1431 |
|---|---|---|---|
| TOTAL CELLS/ML | 3300 | 42000 | 22000 |
| DIVERSITY: DIVISION | 1.3 | 1.6 | 0.8 |
| .CLASS | 1.3 | 1.7 | 0.8 |
| ..ORDER | 1.3 | 2.1 | 1.7 |
| ...FAMILY | 2.0 | 2.4 | 1.8 |
| ....GENUS | 2.9 | 3.2 | 1.9 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...MICRACTINIACEAE | | | | | | |
| ....MICRACTINIUM | 39 | 1 | -- | - | * | 0 |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 430 | 13 | 1800 | 4 | * | 0 |
| ....CHLORELLA | 1100# | 33 | -- | - | -- | - |
| ....CHODATELLA | 20 | 1 | -- | - | -- | - |
| ....DICTYOSPHAERIUM | -- | - | 2700 | 6 | -- | - |
| ....KIRCHNERIELLA | 180 | 5 | 720 | 2 | 160 | 1 |
| ....OOCYSTIS | 78 | 2 | -- | - | * | 0 |
| ....TREUBARIA | -- | - | -- | - | * | 0 |
| ...SCENEDESMACEAE | | | | | | |
| ....CRUCIGENIA | -- | - | 2900 | 7 | -- | - |
| ....SCENEDESMUS | -- | - | 2500 | 6 | 330 | 2 |
| ....TETRASTRUM | 550# | 17 | 720 | 2 | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | 1300 | 3 | 370 | 2 |
| ....POLYTOMA | -- | - | * | 0 | -- | - |
| ...PHACOTACEAE | | | | | | |
| ....PTEROMONAS | -- | - | -- | - | 290 | 1 |
| ..ZYGNEMATALES | | | | | | |
| ...DESMIDIACEAE | | | | | | |
| ....COSMARIUM | -- | - | -- | - | * | 0 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 140 | 4 | 4700 | 11 | 160 | 1 |
| ....MELOSIRA | -- | - | 1400 | 3 | 210 | 1 |
| ..PENNALES | | | | | | |
| ...ACHNANTHACEAE | | | | | | |
| ....ACHNANTHES | -- | - | * | 0 | 120 | 1 |
| ...FRAGILARIACEAE | | | | | | |
| ....SYNEDRA | 39 | 1 | 540 | 1 | -- | - |
| ...NAVICULACEAE | | | | | | |
| ....NAVICULA | 20 | 1 | -- | - | * | 0 |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 59 | 2 | 720 | 2 | 210 | 1 |
| .CHRYSOPHYCEAE | | | | | | |
| ..CHRYSOMONADALES | | | | | | |
| ...CHROMULINACEAE | | | | | | |
| ....CHRYSOCOCCUS | -- | - | 360 | 1 | -- | - |
| .XANTHOPHYCEAE | | | | | | |
| ..HETEROCOCCALES | | | | | | |
| ...CHLOROTHECIACEAE | | | | | | |
| ....OPHIOCYTIUM | -- | - | 360 | 1 | -- | - |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | -- | - | -- | - | * | 0 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | -- | - | 2200 | 5 | -- | - |
| ....ANACYSTIS | -- | - | 17000# | 41 | 12000# | 56 |
| ..HORMOGONALES | | | | | | |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | -- | - | 6800# | 32 |
| ....OSCILLATORIA | -- | - | 720 | 2 | -- | - |
| ....SCHIZOTHRIX | 510# | 15 | -- | - | -- | - |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....EUGLENA | -- | - | -- | - | * | 0 |
| ....TRACHELOMONAS | 180 | 5 | 360 | 1 | 250 | 1 |
| PYRRHOPHYTA (FIRE ALGAE) | | | | | | |
| .DINOPHYCEAE | | | | | | |
| ..PERIDINIALES | | | | | | |
| ...GLENODINIACEAE | | | | | | |
| ....GLENODINIUM | -- | - | * | 0 | 210 | 1 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 07346000 BIG CYPRESS CREEK NEAR JEFFERSON, TX
(Formerly published as Cypress Creek near Jefferson)

LOCATION.--Lat 32°44'58", long 94°29'55", Marion County, Hydrologic Unit 11140306, on left bank 950 ft (290 m) downstream from Ferrell's Bridge Dam, 7.6 mi (12.2 km) upstream from French Creek, and 8.5 mi (13.7 km) west of Jefferson.

DRAINAGE AREA.--850 mi² (2,202 km²).

PERIOD OF RECORD.--July 1924 to September 1959 (published as Cypress Creek), October 1979 to September 1980. Records of stage and discharge for the period October 1959 to September 1979 published by the Corps of Engineers, New Orleans District.

GAGE.--Water-stage recorder. Datum of gage is 180.00 ft (54.864 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers benchmark). Prior to Nov. 2, 1933, staff gage, and Nov. 2, 1933, to Dec. 8, 1955, water-stage recorder, at site about 950 ft (290 m) upstream at datum 3.7 ft (1.13 m) higher. After Dec. 9, 1955, at site about 550 ft (167.6 m) downstream or at present site at datum 180.00 ft (54.864 m) lower.

REMARKS.--Records good except for those periods of faulty or missing gage-heights, Oct. 12-18, Nov. 10, 17-29, Apr. 1, 2, and July 31 to Sept. 8, which are fair. Flow regulated by Lake O' the Pines (station 07345900) since August 1957. Several observations of water temperature were obtained during the year.

AVERAGE DISCHARGE.--36 years (water years 1925-59, 1980), 692 ft³/s (19.60 m³/s), 501,400 acre-ft/yr (618 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 57,100 ft³/s (1,620 m³/s) Apr. 1, 1945, gage height, 28.78 ft (8.772 m) site and datum then in use, from rating curve extended above 29,000 ft³/s (821 m³/s); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,790 ft³/s (79.0 m³/s) Oct. 2 at 1800 hours, gage height, 19.39 ft (5.910 m); minimum daily, 1.2 ft³/s (0.034 m³/s) Oct. 23, 24, Mar. 5.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2730 | 147 | 331 | 1040 | 1310 | 503 | 507 | 2700 | 359 | 92 | 17 | 17 |
| 2 | 2770 | 297 | 142 | 762 | 2170 | 360 | 759 | 2720 | 160 | 11 | 17 | 17 |
| 3 | 2750 | 466 | 65 | 494 | 2670 | 182 | 989 | 2690 | 75 | 16 | 17 | 17 |
| 4 | 2740 | 471 | 8.1 | 459 | 2700 | 87 | 994 | 2150 | 13 | 22 | 17 | 17 |
| 5 | 2730 | 472 | 7.6 | 454 | 2700 | 1.2 | 998 | 1690 | 17 | 21 | 17 | 17 |
| 6 | 2300 | 472 | 7.3 | 452 | 2680 | 1.6 | 1000 | 1650 | 16 | 20 | 17 | 17 |
| 7 | 1520 | 472 | 7.3 | 306 | 2680 | 3.0 | 1000 | 1640 | 16 | 20 | 17 | 17 |
| 8 | 1090 | 472 | 7.1 | 140 | 2690 | 3.1 | 999 | 1620 | 17 | 19 | 17 | 17 |
| 9 | 837 | 317 | 7.1 | 135 | 2700 | 3.3 | 999 | 1360 | 18 | 18 | 17 | 5.9 |
| 10 | 386 | 148 | 7.1 | 135 | 2700 | 94 | 805 | 1040 | 17 | 18 | 17 | 6.0 |
| 11 | 89 | 323 | 83 | 307 | 2710 | 172 | 560 | 990 | 18 | 18 | 17 | 6.2 |
| 12 | 3.0 | 474 | 148 | 461 | 2700 | 170 | 552 | 817 | 18 | 17 | 17 | 6.3 |
| 13 | 2.3 | 465 | 320 | 450 | 2700 | 338 | 618 | 439 | 80 | 17 | 17 | 6.5 |
| 14 | 1.9 | 584 | 686 | 449 | 2700 | 499 | 798 | 97 | 192 | 16 | 17 | 6.8 |
| 15 | 1.8 | 848 | 921 | 449 | 2700 | 504 | 1280 | 15 | 197 | 16 | 17 | 6.8 |
| 16 | 1.8 | 732 | 944 | 449 | 2680 | 506 | 2120 | 72 | 197 | 17 | 17 | 7.0 |
| 17 | 1.7 | 402 | 948 | 448 | 2700 | 739 | 2700 | 15 | 191 | 17 | 17 | 6.9 |
| 18 | 1.6 | 144 | 746 | 446 | 2740 | 987 | 2740 | 6.2 | 191 | 17 | 17 | 7.7 |
| 19 | 1.5 | 141 | 334 | 445 | 2740 | 1010 | 2740 | 4.8 | 192 | 18 | 17 | 7.0 |
| 20 | 1.4 | 140 | 146 | 446 | 2730 | 1350 | 2750 | 89 | 193 | 17 | 17 | 6.8 |
| 21 | 1.3 | 138 | 142 | 452 | 2710 | 1740 | 2730 | 339 | 192 | 17 | 17 | 6.8 |
| 22 | 1.3 | 140 | 320 | 587 | 2700 | 1790 | 2720 | 524 | 191 | 19 | 17 | 6.8 |
| 23 | 1.2 | 139 | 734 | 559 | 2680 | 1810 | 2250 | 750 | 191 | 17 | 56 | 4.1 |
| 24 | 1.2 | 138 | 1320 | 490 | 2220 | 1810 | 1460 | 982 | 191 | 16 | 185 | 2.7 |
| 25 | 1.6 | 297 | 1690 | 471 | 1480 | 1800 | 1100 | 1000 | 192 | 17 | 25 | 3.3 |
| 26 | 1.8 | 465 | 1730 | 316 | 902 | 1550 | 1310 | 1010 | 192 | 16 | 17 | 3.9 |
| 27 | 2.3 | 630 | 1740 | 72 | 569 | 905 | 1630 | 1280 | 193 | 18 | 17 | 4.2 |
| 28 | 3.6 | 795 | 1740 | 3.3 | 503 | 536 | 2120 | 1340 | 193 | 17 | 17 | 4.3 |
| 29 | 4.3 | 813 | 1740 | 82 | 493 | 507 | 2650 | 1050 | 192 | 18 | 17 | 4.8 |
| 30 | 8.4 | 679 | 1730 | 347 | --- | 507 | 2700 | 1010 | 194 | 17 | 17 | 4.3 |
| 31 | 79 | --- | 1420 | 732 | --- | 504 | --- | 781 | --- | 17 | 17 | --- |
| TOTAL | 20065.0 | 12221 | 20171.6 | 12838.3 | 66357 | 20972.2 | 46578 | 31871.0 | 4098 | 616 | 742 | 261.1 |
| MEAN | 647 | 407 | 651 | 414 | 2288 | 677 | 1553 | 1028 | 137 | 19.9 | 23.9 | 8.70 |
| MAX | 2770 | 848 | 1740 | 1040 | 2740 | 1810 | 2750 | 2720 | 359 | 92 | 185 | 17 |
| MIN | 1.2 | 138 | 7.1 | 3.3 | 493 | 1.2 | 507 | 4.8 | 13 | 11 | 17 | 2.7 |
| AC-FT | 39800 | 24240 | 40010 | 25460 | 131600 | 41600 | 92390 | 63220 | 8130 | 1220 | 1470 | 518 |

CAL YR 1979 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1980 TOTAL 236791.2 MEAN 647 MAX 2770 MIN 1.2 AC-FT 469700

## 07346045 BLACK CYPRESS BAYOU AT JEFFERSON, TX

LOCATION.--Lat 32°46'40", long 94°21'26", Marion County, Hydrologic Unit 11140306, near center of channel at downstream side of bridge on U.S. Highway 59, 1.1 mi (1.8 km) north of Jefferson, 2.0 mi (3.2 km) upstream from Texas and Pacific Railway Co. bridge, and 5.2 mi (8.4 km) upstream from mouth.

DRAINAGE AREA.--365 mi$^2$ (945 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1968 to current year. May 1938 to September 1955 (daily gage heights) and November 1956 to August 1968 (daily gage heights and discharge measurements) published by Corps of Engineers as "Black Cypress Creek at Jefferson". September 1964 to August 1968 operated as low-flow partial-record station only.

GAGE.--Water-stage recorder. Datum of gage is 171.47 ft (52.264 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good. No known regulation or diversion in vicinity of gage.

AVERAGE DISCHARGE.--11 years (water years 1969-79), 352 ft$^3$/s (9.969 m$^3$/s), 13.10 in/yr (333 mm/yr), 255,000 acre-ft/yr (314 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,120 ft$^3$/s (202 m$^3$/s) Apr. 25, 1974, gage height, 17.69 ft (5.392 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1938, 22.42 ft (6.834 m) Apr. 29, 1958, from records of Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,790 ft$^3$/s (107 m$^3$/s) Jan. 26 at 1000 hours, gage height, 15.92 ft (4.852 m), no peak above base of 4,000 ft$^3$/s (113 m$^3$/s); no flow Sept. 11-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 317 | 167 | 378 | 747 | 819 | 309 | 738 | 1630 | 152 | 54 | 2.8 | .35 |
| 2 | 189 | 148 | 338 | 648 | 727 | 305 | 783 | 1240 | 140 | 44 | 2.2 | .23 |
| 3 | 123 | 167 | 296 | 586 | 671 | 296 | 788 | 966 | 147 | 36 | 1.9 | .15 |
| 4 | 94 | 215 | 260 | 538 | 629 | 287 | 743 | 793 | 179 | 29 | 1.5 | .10 |
| 5 | 77 | 243 | 234 | 497 | 604 | 280 | 674 | 663 | 203 | 25 | 1.2 | .06 |
| 6 | 64 | 252 | 214 | 463 | 586 | 274 | 596 | 564 | 188 | 21 | .98 | .04 |
| 7 | 55 | 257 | 199 | 437 | 561 | 273 | 520 | 487 | 149 | 18 | .71 | .04 |
| 8 | 48 | 260 | 187 | 418 | 576 | 273 | 449 | 428 | 158 | 14 | .59 | .03 |
| 9 | 43 | 254 | 180 | 402 | 743 | 270 | 386 | 387 | 317 | 12 | .51 | .02 |
| 10 | 38 | 232 | 179 | 384 | 833 | 263 | 337 | 371 | 276 | 11 | .41 | .01 |
| 11 | 36 | 214 | 174 | 371 | 969 | 257 | 306 | 364 | 198 | 8.5 | .32 | .00 |
| 12 | 38 | 212 | 183 | 354 | 1450 | 257 | 331 | 364 | 193 | 6.8 | .29 | .00 |
| 13 | 39 | 249 | 229 | 329 | 1700 | 257 | 453 | 485 | 205 | 5.8 | .24 | .00 |
| 14 | 36 | 292 | 249 | 306 | 1620 | 258 | 638 | 485 | 190 | 4.9 | .21 | .00 |
| 15 | 32 | 325 | 252 | 288 | 1390 | 275 | 695 | 453 | 158 | 3.8 | .21 | .00 |
| 16 | 29 | 360 | 271 | 279 | 1130 | 335 | 1220 | 672 | 126 | 3.0 | .24 | .00 |
| 17 | 28 | 396 | 309 | 268 | 921 | 448 | 1810 | 762 | 100 | 2.6 | .22 | .00 |
| 18 | 37 | 400 | 349 | 255 | 773 | 584 | 1830 | 690 | 82 | 2.2 | .18 | .00 |
| 19 | 46 | 362 | 379 | 245 | 671 | 739 | 1570 | 646 | 71 | 1.8 | .16 | .00 |
| 20 | 47 | 301 | 405 | 292 | 596 | 1140 | 1240 | 673 | 89 | 1.7 | .13 | .00 |
| 21 | 51 | 285 | 413 | 421 | 536 | 1190 | 968 | 677 | 135 | 2.0 | .08 | .00 |
| 22 | 67 | 310 | 436 | 773 | 487 | 1060 | 780 | 694 | 115 | 1.7 | .05 | .00 |
| 23 | 80 | 278 | 534 | 1290 | 445 | 924 | 649 | 702 | 118 | 1.4 | .03 | .00 |
| 24 | 76 | 256 | 720 | 1770 | 409 | 815 | 545 | 625 | 131 | 1.2 | .02 | .00 |
| 25 | 73 | 271 | 796 | 3020 | 378 | 694 | 487 | 512 | 132 | 1.1 | .01 | .00 |
| 26 | 72 | 319 | 878 | 3730 | 352 | 589 | 514 | 413 | 129 | 1.1 | .01 | .00 |
| 27 | 70 | 368 | 1050 | 3130 | 330 | 515 | 509 | 336 | 120 | 1.8 | .02 | .00 |
| 28 | 66 | 401 | 1100 | 2160 | 312 | 522 | 521 | 278 | 103 | 9.4 | .03 | .00 |
| 29 | 63 | 413 | 1030 | 1530 | 298 | 578 | 1360 | 234 | 84 | 15 | .16 | .41 |
| 30 | 65 | 405 | 961 | 1200 | --- | 657 | 2030 | 199 | 67 | 7.3 | .59 | 14 |
| 31 | 137 | --- | 861 | 970 | --- | 697 | --- | 171 | --- | 4.1 | .47 | --- |
| TOTAL | 2236 | 8612 | 14044 | 28101 | 21516 | 15621 | 24470 | 17964 | 4455 | 351.2 | 16.47 | 15.44 |
| MEAN | 72.1 | 287 | 453 | 906 | 742 | 504 | 816 | 579 | 149 | 11.3 | .53 | .51 |
| MAX | 317 | 413 | 1100 | 3730 | 1700 | 1190 | 2030 | 1630 | 317 | 54 | 2.8 | 14 |
| MIN | 28 | 148 | 174 | 245 | 298 | 257 | 306 | 171 | 67 | 1.1 | .01 | .00 |
| CFSM | .20 | .79 | 1.24 | 2.48 | 2.03 | 1.38 | 2.24 | 1.59 | .41 | .03 | .001 | .001 |
| IN. | .23 | .88 | 1.43 | 2.86 | 2.19 | 1.59 | 2.49 | 1.83 | .45 | .04 | .00 | .00 |
| AC-FT | 4440 | 17080 | 27860 | 55740 | 42680 | 30980 | 48540 | 35630 | 8840 | 697 | 33 | 31 |

CAL YR 1979 TOTAL 198670.00 MEAN 544 MAX 3470 MIN 13 CFSM 1.49 IN 20.25 AC-FT 394100
WTR YR 1980 TOTAL 137402.11 MEAN 375 MAX 3730 MIN .00 CFSM 1.03 IN 14.00 AC-FT 272500

## 07346045 BLACK CYPRESS BAYOU AT JEFFERSON, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|
| OCT<br>10... | 1340 | 38 | 60 | 19.0 | 14 | 2 | 3.4 | 1.3 | 3.9 |
| NOV<br>28... | 1120 | 396 | 55 | 11.0 | 10 | 4 | 2.5 | 1.0 | 3.6 |
| JAN<br>09... | 1145 | 404 | 52 | 8.0 | 13 | 6 | 2.7 | 1.4 | 5.0 |
| FEB<br>14... | 1815 | 1530 | 42 | 8.5 | 9 | 4 | 1.8 | 1.0 | 2.8 |
| APR<br>02... | 1145 | 814 | 40 | 10.0 | 12 | 2 | 2.8 | 1.1 | 3.6 |
| MAY<br>14... | 1250 | 505 | 40 | 20.0 | 13 | 1 | 2.9 | 1.3 | 2.9 |
| JUN<br>18... | 1400 | 82 | 55 | 29.0 | 19 | 6 | 4.9 | 1.7 | 4.4 |
| JUL<br>30... | 1000 | 8.1 | 80 | 27.0 | 22 | 1 | 5.2 | 2.2 | 4.8 |
| SEP<br>09... | 1620 | .03 | 134 | 31.5 | 36 | 8 | 8.5 | 3.5 | 11 |

| DATE | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT<br>10... | .5 | 2.2 | 14 | 0 | 7.2 | 6.7 | .1 | 19 | 51 |
| NOV<br>28... | .5 | 2.9 | 8 | 0 | 11 | 6.7 | .0 | 17 | 49 |
| JAN<br>09... | .6 | 1.7 | 8 | 0 | 6.5 | 6.5 | .1 | 17 | 45 |
| FEB<br>14... | .4 | 1.5 | 6 | 0 | 7.5 | 4.0 | .1 | 11 | 33 |
| APR<br>02... | .5 | 1.4 | 12 | 0 | 5.5 | 4.8 | .1 | 11 | 36 |
| MAY<br>14... | .4 | 1.6 | 14 | 0 | 5.6 | 4.8 | .0 | 13 | 39 |
| JUN<br>18... | .4 | 2.1 | 16 | 0 | 7.6 | 6.3 | .1 | 20 | 55 |
| JUL<br>30... | .4 | 2.4 | 26 | 0 | 2.1 | 8.5 | .1 | 15 | 53 |
| SEP<br>09... | .8 | 2.7 | 34 | 0 | 4.7 | 23 | .2 | 14 | 84 |

## 07346050 LITTLE CYPRESS CREEK NEAR ORE CITY, TX

LOCATION.--Lat 32°40'21", long 94°45'03", Upshur County, Hydrologic Unit 11140307, on right bank at downstream side of bridge on U.S. Highway 259, 4 mi (6 km) downstream from Clear Creek, 9 mi (14 km) south of Ore City, and 12 mi (19 km) north of Longview.

DRAINAGE AREA.--383 mi$^2$ (992 km$^2$).

PERIOD OF RECORD.--December 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 232.67 ft (70.918 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No known diversion above station. During the water year, the city of Gilmer discharged 839 acre-ft (1.03 hm$^3$) of sewage effluent into a tributary above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--17 years (water years 1964-80), 289 ft$^3$/s (8.184 m$^3$/s), 10.25 in/yr (260 mm/yr), 209,400 acre-ft/yr (258 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,500 ft$^3$/s (666 m$^3$/s) Apr. 24, 1966, gage height, 20.20 ft (6.157 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1902 occurred in March 1945; maximum stage since 1945, that of Apr. 24, 1966. The flood in April 1958 reached a stage of 19.4 ft (5.91 m), or 1.3 ft (0.40 m) lower than the flood of March 1945 at a point 6 mi (10 km) upstream, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,070 ft$^3$/s (86.9 m$^3$/s) Jan. 24 at 0600 hours, gage height, 11.68 ft (3.560 m), no other peak above base of 2,000 ft$^3$/s (56.6 m$^3$/s); no flow Aug. 19 to Sept. 29.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 208 | 243 | 178 | 637 | 603 | 235 | 806 | 898 | 107 | 20 | 3.9 | .00 |
| 2 | 124 | 250 | 159 | 525 | 582 | 244 | 832 | 818 | 97 | 16 | 3.3 | .00 |
| 3 | 93 | 251 | 146 | 449 | 575 | 240 | 735 | 804 | 88 | 14 | 2.4 | .00 |
| 4 | 80 | 274 | 137 | 392 | 535 | 239 | 606 | 879 | 79 | 12 | 1.7 | .00 |
| 5 | 72 | 279 | 136 | 337 | 482 | 237 | 485 | 1110 | 73 | 11 | 1.3 | .00 |
| 6 | 66 | 217 | 134 | 296 | 438 | 226 | 390 | 1060 | 65 | 9.5 | .94 | .00 |
| 7 | 62 | 145 | 131 | 279 | 396 | 216 | 322 | 850 | 59 | 8.6 | .70 | .00 |
| 8 | 60 | 112 | 127 | 262 | 436 | 212 | 276 | 647 | 76 | 7.6 | .51 | .00 |
| 9 | 58 | 101 | 125 | 244 | 883 | 205 | 230 | 474 | 228 | 7.0 | .35 | .00 |
| 10 | 56 | 114 | 121 | 228 | 1320 | 199 | 204 | 345 | 237 | 6.0 | .28 | .00 |
| 11 | 55 | 158 | 119 | 220 | 1700 | 195 | 182 | 255 | 160 | 5.2 | .25 | .00 |
| 12 | 54 | 196 | 126 | 208 | 1950 | 201 | 171 | 258 | 79 | 4.9 | .27 | .00 |
| 13 | 53 | 233 | 220 | 196 | 1700 | 204 | 440 | 583 | 58 | 4.4 | .19 | .00 |
| 14 | 49 | 265 | 315 | 190 | 1390 | 193 | 989 | 610 | 49 | 3.8 | .11 | .00 |
| 15 | 49 | 296 | 345 | 184 | 1140 | 208 | 1550 | 470 | 44 | 3.4 | .07 | .00 |
| 16 | 48 | 336 | 399 | 183 | 941 | 274 | 1850 | 719 | 39 | 3.0 | .04 | .00 |
| 17 | 48 | 355 | 509 | 184 | 806 | 462 | 1550 | 981 | 34 | 2.6 | .02 | .00 |
| 18 | 53 | 311 | 606 | 189 | 708 | 573 | 1310 | 792 | 33 | 2.0 | .01 | .00 |
| 19 | 57 | 206 | 566 | 216 | 622 | 719 | 1080 | 680 | 30 | 1.9 | .00 | .00 |
| 20 | 57 | 152 | 460 | 323 | 546 | 973 | 864 | 778 | 31 | 1.7 | .00 | .00 |
| 21 | 61 | 139 | 363 | 484 | 483 | 1080 | 690 | 876 | 59 | 1.5 | .00 | .00 |
| 22 | 65 | 196 | 362 | 1200 | 431 | 1000 | 523 | 801 | 67 | 1.9 | .00 | .00 |
| 23 | 73 | 266 | 571 | 2680 | 385 | 835 | 372 | 695 | 83 | 1.3 | .00 | .00 |
| 24 | 75 | 313 | 929 | 3020 | 345 | 708 | 268 | 577 | 87 | .92 | .00 | .00 |
| 25 | 77 | 344 | 1260 | 2610 | 311 | 573 | 291 | 415 | 79 | .87 | .00 | .00 |
| 26 | 77 | 377 | 1460 | 1790 | 277 | 449 | 610 | 307 | 66 | .84 | .00 | .00 |
| 27 | 69 | 378 | 1350 | 1260 | 254 | 385 | 784 | 250 | 56 | .86 | .00 | .00 |
| 28 | 62 | 337 | 1190 | 1010 | 244 | 406 | 754 | 215 | 42 | 1.0 | .00 | .00 |
| 29 | 59 | 265 | 1000 | 857 | 235 | 535 | 891 | 179 | 32 | 2.7 | .00 | .00 |
| 30 | 64 | 214 | 872 | 762 | --- | 682 | 1010 | 146 | 25 | 5.1 | .00 | 1.3 |
| 31 | 164 | --- | 759 | 675 | --- | 687 | --- | 124 | --- | 3.5 | .00 | --- |
| TOTAL | 2248 | 7323 | 15175 | 22090 | 20718 | 13595 | 21065 | 18596 | 2262 | 165.09 | 16.34 | 1.30 |
| MEAN | 72.5 | 244 | 490 | 713 | 714 | 439 | 702 | 600 | 75.4 | 5.33 | .53 | .043 |
| MAX | 208 | 378 | 1460 | 3020 | 1950 | 1080 | 1850 | 1110 | 237 | 20 | 3.9 | 1.3 |
| MIN | 48 | 101 | 119 | 183 | 235 | 193 | 171 | 124 | 25 | .84 | .00 | .00 |
| CFSM | .19 | .64 | 1.28 | 1.86 | 1.86 | 1.15 | 1.83 | 1.57 | .20 | .01 | .001 | .000 |
| IN. | .22 | .71 | 1.47 | 2.15 | 2.01 | 1.32 | 2.05 | 1.81 | .22 | .02 | .00 | .00 |
| AC-FT | 4460 | 14530 | 30100 | 43820 | 41090 | 26970 | 41780 | 36890 | 4490 | 327 | 32 | 2.6 |

CAL YR 1979 TOTAL 191201.00 MEAN 524 MAX 9190 MIN 13 CFSM 1.37 IN 18.57 AC-FT 379200
WTR YR 1980 TOTAL 123254.73 MEAN 337 MAX 3020 MIN .00 CFSM .88 IN 11.97 AC-FT 244500

## 07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX

**LOCATION.**--Lat 32°42'46", long 94°20'44", Harrison-Marion County line, Hydrologic Unit 11140307, near center of channel at downstream side of bridge on U.S. Highway 59, 0.3 mi (0.5 km) downstream from Texas and Pacific Railway Co. bridge, 3.3 mi (5.3 km) downstream from Grays Creek, 3.5 mi (5.6 km) south of Jefferson, and 6.8 mi (10.9 km) upstream from mouth.

**DRAINAGE AREA.**--675 $mi^2$ (1,748 $km^2$).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--June 1946 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 174.60 ft (53.218 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 19, 1947, nonrecording gage at upstream side of bridge at same datum.

**REMARKS.**--Water-discharge records good. For record of sewage effluent discharges into tributaries above this station, see station 07346050. No known diversion above station.

**AVERAGE DISCHARGE.**--34 years (water years 1947-80), 542 $ft^3/s$ (1535 $m^3/s$), 10.91 in/yr (277 mm/yr), 392,700 acre-ft/yr (484 $hm^3/yr$).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 35,500 $ft^3/s$ (1,010 $m^3/s$) Apr. 26, 1966, gage height, 22.28 ft (6.791 m); no flow at times.

Maximum stage since May 1944, that of Apr. 26, 1966.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood in May 1944 reached a stage of 21.1 ft (6.43 m).

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 5,960 $ft^3/s$ (169 $m^3/s$) Jan 27 at 1100 hours, gage height, 14.19 ft (4.325 m); no flow Sept. 6-18, 25-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1400 | 247 | 463 | 1560 | 2050 | 602 | 1230 | 922 | 357 | 68 | .61 | .03 |
| 2 | 1180 | 278 | 467 | 1450 | 1640 | 602 | 1240 | 1020 | 295 | 55 | .54 | .03 |
| 3 | 918 | 307 | 464 | 1340 | 1420 | 578 | 1200 | 1350 | 242 | 44 | .45 | .02 |
| 4 | 705 | 325 | 444 | 1250 | 1250 | 564 | 1120 | 1560 | 205 | 35 | .37 | .02 |
| 5 | 505 | 329 | 403 | 1150 | 1140 | 552 | 1060 | 1540 | 181 | 29 | .32 | .01 |
| 6 | 324 | 328 | 352 | 1040 | 1050 | 527 | 1050 | 1440 | 162 | 25 | .23 | .00 |
| 7 | 200 | 325 | 309 | 931 | 1000 | 507 | 1030 | 1270 | 144 | 22 | .18 | .00 |
| 8 | 153 | 328 | 278 | 825 | 1050 | 490 | 975 | 1150 | 140 | 19 | .15 | .00 |
| 9 | 132 | 358 | 258 | 716 | 1620 | 474 | 871 | 1150 | 171 | 16 | .13 | .00 |
| 10 | 119 | 413 | 246 | 627 | 2420 | 458 | 757 | 1180 | 188 | 14 | .10 | .00 |
| 11 | 109 | 359 | 238 | 561 | 2470 | 445 | 655 | 1140 | 231 | 13 | .09 | .00 |
| 12 | 102 | 275 | 251 | 517 | 2320 | 454 | 709 | 1060 | 268 | 12 | .08 | .00 |
| 13 | 97 | 222 | 346 | 485 | 2070 | 480 | 1020 | 1240 | 287 | 11 | .08 | .00 |
| 14 | 92 | 209 | 396 | 463 | 2070 | 469 | 1570 | 1270 | 270 | 9.2 | .08 | .00 |
| 15 | 88 | 225 | 421 | 441 | 2420 | 453 | 1710 | 1130 | 196 | 8.7 | .08 | .00 |
| 16 | 86 | 251 | 439 | 433 | 2620 | 440 | 1710 | 1420 | 133 | 7.9 | .07 | .00 |
| 17 | 85 | 276 | 452 | 460 | 2410 | 429 | 1650 | 1880 | 102 | 7.0 | .06 | .00 |
| 18 | 87 | 301 | 461 | 456 | 2070 | 410 | 1610 | 1820 | 85 | 6.2 | .06 | .00 |
| 19 | 109 | 321 | 469 | 442 | 1750 | 406 | 1850 | 1610 | 75 | 5.4 | .06 | .02 |
| 20 | 118 | 339 | 481 | 460 | 1540 | 443 | 2090 | 1450 | 76 | 4.7 | .05 | .02 |
| 21 | 107 | 464 | 505 | 519 | 1370 | 502 | 1960 | 1350 | 85 | 4.2 | .05 | .02 |
| 22 | 113 | 776 | 580 | 1150 | 1220 | 580 | 1700 | 1240 | 84 | 3.8 | .04 | .01 |
| 23 | 116 | 878 | 824 | 2190 | 1090 | 685 | 1500 | 1070 | 107 | 3.2 | .04 | .02 |
| 24 | 117 | 883 | 1310 | 2560 | 976 | 895 | 1300 | 956 | 133 | 2.5 | .03 | .01 |
| 25 | 123 | 837 | 1600 | 2850 | 877 | 1100 | 1160 | 944 | 140 | 1.9 | .03 | .00 |
| 26 | 126 | 753 | 1640 | 4180 | 782 | 1190 | 1150 | 949 | 141 | 1.3 | .02 | .00 |
| 27 | 123 | 636 | 1670 | 5830 | 709 | 1180 | 1040 | 895 | 134 | .86 | .02 | .00 |
| 28 | 120 | 531 | 1580 | 5100 | 647 | 1170 | 938 | 800 | 117 | .89 | .02 | .00 |
| 29 | 119 | 482 | 1500 | 3970 | 597 | 1180 | 880 | 681 | 99 | .79 | .03 | .08 |
| 30 | 123 | 463 | 1560 | 3110 | --- | 1310 | 885 | 547 | 83 | .63 | .04 | .33 |
| 31 | 209 | --- | 1610 | 2580 | --- | 1300 | --- | 439 | --- | .60 | .03 | --- |
| TOTAL | 8005 | 12719 | 22017 | 49646 | 44648 | 20875 | 37620 | 36473 | 4931 | 432.77 | 4.14 | .62 |
| MEAN | 258 | 424 | 710 | 1601 | 1540 | 673 | 1254 | 1177 | 164 | 14.0 | .13 | .021 |
| MAX | 1400 | 883 | 1670 | 5830 | 2620 | 1310 | 2090 | 1880 | 357 | 68 | .61 | .33 |
| MIN | 85 | 209 | 238 | 433 | 597 | 406 | 655 | 439 | 75 | .60 | .02 | .00 |
| CFSM | .38 | .63 | 1.05 | 2.37 | 2.28 | 1.00 | 1.86 | 1.74 | .24 | .02 | .000 | .000 |
| IN. | .44 | .70 | 1.21 | 2.74 | 2.46 | 1.15 | 2.07 | 2.01 | .27 | .02 | .00 | .00 |
| AC-FT | 15880 | 25230 | 43670 | 98470 | 88560 | 41410 | 74620 | 72340 | 9780 | 858 | 8.2 | 1.2 |

CAL YR 1979 TOTAL 368030.00 MEAN 1008 MAX 9190 MIN 25 CFSM 1.49 IN 20.28 AC-FT 730000
WTR YR 1980 TOTAL 237371.53 MEAN 649 MAX 5830 MIN .00 CFSM .96 IN 13.08 AC-FT 470800

## 07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year. Pesticide analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,350 micromhos Nov. 9, 1969; minimum daily, 39 micromhos Apr. 20, 1973.
WATER TEMPERATURES: Maximum daily, 32.0°C on several days during summer months of 1977-78, and 1980; minimum daily, 1.0°C Jan. 21-23, 1978.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 308 micromhos Oct. 19; minimum daily, 80 micromhos Jan. 27.
WATER TEMPERATURES: Maximum daily, 32.0°C on several days during August and September; minimum daily, 4.0°C Feb. 6-10.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>18... | 0655 | 86 | 284 | -- | 18.0 | -- | -- | -- | -- | -- | 30 | 15 |
| NOV<br>14... | 1005 | 207 | 182 | 6.7 | 7.0 | 20 | 8.3 | 12.2 | 98 | .7 | 28 | 18 |
| DEC<br>31... | 1700 | 1620 | 114 | -- | 9.0 | -- | -- | -- | -- | -- | 20 | 14 |
| JAN<br>08... | 1230 | 825 | 143 | 6.2 | 7.5 | 60 | 7.5 | 9.9 | 83 | .7 | 25 | 21 |
| APR<br>02... | 0915 | 1240 | 121 | 6.3 | 16.0 | 40 | 17 | 8.0 | 81 | 1.0 | 21 | 12 |
| MAY<br>14... | 0835 | 1300 | 104 | 6.3 | 21.0 | 120 | 27 | 5.7 | 63 | 2.0 | 22 | 10 |
| JUL<br>31... | 0810 | 3.2 | 265 | 7.0 | 28.0 | -- | -- | 4.2 | 53 | 2.2 | 42 | 6 |
| AUG<br>30... | 1940 | .02 | 256 | -- | 32.0 | -- | -- | -- | -- | -- | 38 | 4 |
| SEP<br>11... | 0740 | .00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 30... | 1300 | .28 | 223 | -- | -- | -- | -- | -- | -- | -- | 35 | 5 |

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>18... | 7.4 | 2.8 | 39 | 3.1 | 3.3 | 18 | 0 | 16 | 67 | .1 | 24 |
| NOV<br>14... | 6.8 | 2.7 | 24 | 2.0 | 3.9 | 12 | 0 | 19 | 37 | .1 | 22 |
| DEC<br>31... | 4.6 | 2.1 | 11 | 1.1 | 3.8 | 7 | 0 | 21 | 16 | .0 | 15 |
| JAN<br>08... | 6.0 | 2.5 | 14 | 1.2 | 3.2 | 5 | 0 | 25 | 20 | .1 | 21 |
| APR<br>02... | 5.1 | 2.1 | 14 | 1.3 | 2.4 | 12 | 0 | 14 | 20 | .1 | 13 |
| MAY<br>14... | 5.3 | 2.2 | 9.4 | .9 | 2.5 | 15 | 0 | 12 | 13 | .1 | 14 |
| JUL<br>31... | 10 | 4.2 | 31 | 2.1 | 4.2 | 44 | 0 | 13 | 50 | .2 | 18 |
| AUG<br>30... | 8.5 | 4.1 | 31 | 2.2 | 4.5 | 42 | 0 | 9.9 | 49 | .2 | 14 |
| SEP<br>11... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 30... | 7.8 | 3.8 | 27 | 2.0 | 4.1 | 34 | 0 | 15 | 43 | .1 | 9.7 |

## 07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) | SOLIDS, VOLA- TILE, SUS- PENDED (MG/L) | NITRO- GEN, NITRATE TOTAL (MG/L AS N) | NITRO- GEN, NITRITE TOTAL (MG/L AS N) | NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO- GEN, AMMONIA TOTAL (MG/L AS N) | NITRO- GEN, ORGANIC TOTAL (MG/L AS N) | NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS- PHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | | |
| 18... | 168 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| NOV | | | | | | | | | | | |
| 14... | 121 | 6 | 0 | .08 | .000 | .08 | .010 | .60 | .61 | .070 | 6.6 |
| DEC | | | | | | | | | | | |
| 31... | 77 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN | | | | | | | | | | | |
| 08... | 95 | 15 | 13 | .29 | .010 | .30 | .170 | 1.4 | 1.6 | .080 | 6.5 |
| APR | | | | | | | | | | | |
| 02... | 77 | 12 | 10 | -- | -- | -- | -- | -- | 1.0 | .080 | 10 |
| MAY | | | | | | | | | | | |
| 14... | 66 | 28 | 2 | .20 | .020 | .22 | .170 | .93 | 1.1 | .130 | 8.7 |
| JUL | | | | | | | | | | | |
| 31... | 154 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| AUG | | | | | | | | | | | |
| 30... | 142 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP | | | | | | | | | | | |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 30... | 123 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | TIME | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, DIS- SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 08... | 1230 | 0 | 70 | <1 | 0 | 0 | 610 |
| APR | | | | | | | |
| 02... | 0915 | 0 | 60 | <1 | 0 | 0 | 570 |
| MAY | | | | | | | |
| 14... | 0835 | 1 | 60 | <1 | 0 | 1 | 360 |
| JUL | | | | | | | |
| 31... | 0810 | 1 | 100 | <1 | 10 | 2 | 300 |

| DATE | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY DIS- SOLVED (UG/L AS HG) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, DIS- SOLVED (UG/L AS AG) | ZINC, DIS- SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| JAN | | | | | | |
| 08... | 0 | 50 | .1 | 0 | 0 | 10 |
| APR | | | | | | |
| 02... | 0 | 60 | .0 | 0 | 0 | 10 |
| MAY | | | | | | |
| 14... | 1 | 130 | .0 | 0 | 0 | 7 |
| JUL | | | | | | |
| 31... | 2 | 1200 | .0 | 0 | 0 | 9 |

## 07346070 LITTLE CYPRESS CREEK NR JEFFERSON, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | PCB, TOTAL (UG/L) | PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) | NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | CHLORDANE, TOTAL (UG/L) | CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| APR | | | | | | | | | | |
| 02... | 0915 | .0 | 15 | .00 | .00 | .0 | .0 | 3 | .00 | 1.0 |

| DATE | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) | DI-AZINON, TOTAL (UG/L) | DI-ELDRIN TOTAL (UG/L) | DI-ELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | ENDOSULFAN, TOTAL (UG/L) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| APR | | | | | | | | | | |
| 02... | .00 | 1.6 | .00 | 2.0 | .00 | .00 | .2 | .00 | .00 | .0 |

| DATE | ETHION, TOTAL (UG/L) | HEPTACHLOR, TOTAL (UG/L) | HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) | HEPTACHLOR EPOXIDE TOTAL (UG/L) | HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) | MALATHION, TOTAL (UG/L) | METHOXYCHLOR, TOTAL (UG/L) | METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| APR | | | | | | | | | | |
| 02... | .00 | .00 | .0 | .00 | .0 | .00 | .0 | .00 | .00 | .0 |

| DATE | METHYL PARATHION, TOTAL (UG/L) | METHYL TRITHION, TOTAL (UG/L) | MIREX, TOTAL (UG/L) | PARATHION, TOTAL (UG/L) | TOXAPHENE, TOTAL (UG/L) | TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) | TOTAL TRITHION (UG/L) | 2,4-D, TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) | SILVEX, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| APR | | | | | | | | | | |
| 02... | .00 | .00 | .00 | .00 | 0 | 0 | .00 | .00 | .00 | .00 |

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCTANCE (MICROMHOS) | DISSOLVED SOLIDS (MG/L) | DISSOLVED SOLIDS (TONS) | DISSOLVED CHLORIDE (MG/L) | DISSOLVED CHLORIDE (TONS) | DISSOLVED SULFATE (MG/L) | DISSOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 8005 | 158 | 95 | 2050 | 28 | 598 | 16 | 342 | 24 |
| NOV. | 1979 | 12719 | 146 | 89 | 3070 | 24 | 832 | 16 | 547 | 24 |
| DEC. | 1979 | 22017 | 130 | 80 | 4760 | 21 | 1250 | 15 | 867 | 22 |
| JAN. | 1980 | 49646 | 106 | 66 | 8850 | 17 | 2240 | 12 | 1660 | 18 |
| FEB. | 1980 | 44648 | 109 | 68 | 8210 | 17 | 2070 | 13 | 1540 | 19 |
| MAR. | 1980 | 20875 | 147 | 90 | 5070 | 24 | 1370 | 16 | 903 | 24 |
| APR. | 1980 | 37620 | 117 | 72 | 7340 | 19 | 1880 | 13 | 1360 | 20 |
| MAY | 1980 | 36473 | 105 | 66 | 6480 | 16 | 1620 | 12 | 1230 | 18 |
| JUNE | 1980 | 4931 | 184 | 111 | 1470 | 32 | 428 | 19 | 246 | 28 |
| JULY | 1980 | 432.77 | 216 | 127 | 149 | 39 | 46 | 20 | 24 | 32 |
| AUG. | 1980 | 4.14 | 264 | 152 | 1.7 | 51 | 0.6 | 22 | 0.2 | 36 |
| SEPT | 1980 | 0.62 | 230 | 135 | 0.2 | 42 | 0.07 | 21 | 0.03 | 33 |
| TOTAL | | 237371.53 | ** | ** | 47400 | ** | 12300 | ** | 8720 | ** |
| WTD. AVG. | | 649 | 120 | 74 | ** | 19 | ** | 14 | ** | 20 |

## 07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 99 | 165 | 159 | 117 | 99 | 156 | 123 | 116 | 164 | 185 | 265 | 252 |
| 2 | 94 | 154 | 160 | 120 | 102 | 155 | 121 | 107 | 170 | 190 | 264 | 253 |
| 3 | 105 | 160 | 159 | 124 | 105 | 151 | 127 | 96 | 175 | 195 | 265 | 254 |
| 4 | 120 | 170 | 162 | 127 | 107 | 153 | 130 | 92 | 181 | 198 | 266 | 252 |
| 5 | 131 | 178 | 165 | 131 | 106 | 165 | 129 | 99 | 186 | 200 | 265 | 251 |
| 6 | 150 | 165 | 168 | 135 | 108 | 166 | 132 | 106 | 189 | 207 | 264 | --- |
| 7 | 179 | 150 | 170 | 139 | 110 | 163 | 141 | 115 | 198 | 215 | 265 | --- |
| 8 | 190 | 160 | 172 | 143 | 112 | 165 | 148 | 110 | 189 | 237 | 265 | --- |
| 9 | 220 | 170 | 173 | 151 | 115 | 166 | 166 | 107 | 180 | 240 | 264 | --- |
| 10 | 242 | 173 | 175 | 159 | 90 | 166 | 170 | 102 | 185 | 244 | 264 | --- |
| 11 | 255 | 172 | 178 | 164 | 88 | 167 | 164 | 106 | 189 | 246 | 263 | --- |
| 12 | 276 | 176 | 173 | 168 | 92 | 165 | 168 | 110 | 187 | 249 | 262 | --- |
| 13 | 285 | 175 | 160 | 175 | 98 | 161 | 109 | 100 | 152 | 254 | 262 | --- |
| 14 | 294 | 182 | 153 | 178 | 110 | 160 | 93 | 105 | 153 | 257 | 261 | --- |
| 15 | 300 | 175 | 151 | 182 | 99 | 159 | 90 | 106 | 160 | 259 | 260 | --- |
| 16 | 303 | 169 | 150 | 185 | 101 | 160 | 94 | 88 | 176 | 260 | 260 | --- |
| 17 | 290 | 160 | 145 | 170 | 103 | 168 | 102 | 83 | 184 | 262 | 260 | --- |
| 18 | 284 | 155 | 140 | 165 | 108 | 163 | 107 | 86 | 185 | 267 | 260 | --- |
| 19 | 308 | 151 | 135 | 161 | 113 | 162 | 101 | 98 | 190 | 268 | 260 | 235 |
| 20 | 275 | 145 | 130 | 155 | 118 | 171 | 95 | 106 | 194 | 267 | 261 | 238 |
| 21 | 248 | 125 | 135 | 145 | 124 | 157 | 93 | 103 | 190 | 266 | 260 | 232 |
| 22 | 254 | 116 | 130 | 110 | 129 | 147 | 100 | 107 | 195 | 268 | 258 | 233 |
| 23 | 252 | 110 | 128 | 95 | 135 | 149 | 105 | 112 | 225 | 268 | 259 | 233 |
| 24 | 245 | 115 | 122 | 92 | 139 | 151 | 121 | 111 | 250 | 268 | 267 | 234 |
| 25 | 235 | 130 | 115 | 90 | 143 | 139 | 118 | 113 | 279 | 269 | 257 | --- |
| 26 | 230 | 140 | 112 | 87 | 146 | 130 | 120 | 117 | 192 | 267 | 258 | --- |
| 27 | 222 | 145 | 110 | 80 | 150 | 130 | 125 | 122 | 206 | 266 | 257 | --- |
| 28 | 230 | 148 | 112 | 84 | 153 | 131 | 131 | 131 | 195 | 265 | 256 | --- |
| 29 | 235 | 145 | 112 | 88 | 157 | 129 | 135 | 142 | 185 | 264 | 255 | 219 |
| 30 | 238 | 148 | 113 | 92 | --- | 122 | 123 | 145 | 180 | 264 | 256 | 223 |
| 31 | 181 | --- | 114 | 95 | --- | 124 | --- | 156 | --- | 263 | 257 | --- |
| MEAN | 225 | 154 | 145 | 132 | 116 | 153 | 123 | 110 | 189 | 246 | 261 | 239 |

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 21.0 | 15.0 | 6.0 | 9.0 | 5.0 | --- | --- | 19.0 | 25.0 | --- | 31.0 | 32.0 |
| 2 | 21.0 | 14.0 | 5.0 | 8.5 | 5.0 | 8.0 | --- | 19.5 | 26.0 | 29.0 | 31.0 | 32.0 |
| 3 | --- | --- | 4.5 | 8.5 | 5.0 | 6.0 | 18.0 | 19.0 | --- | 30.0 | 31.0 | 32.0 |
| 4 | 19.5 | 13.0 | 5.0 | 9.0 | 5.0 | 10.0 | 18.0 | 19.0 | 26.0 | 30.0 | 31.0 | 32.0 |
| 5 | 19.5 | 12.0 | 6.5 | 9.0 | 5.0 | 11.0 | 17.0 | 20.0 | 26.0 | 30.0 | 31.0 | 27.0 |
| 6 | 20.0 | 11.0 | 7.0 | 9.0 | 4.0 | 11.0 | 18.0 | 20.5 | 26.0 | 31.0 | 31.0 | --- |
| 7 | 21.0 | 11.0 | 7.0 | 9.0 | 4.0 | 14.0 | 20.0 | 21.0 | 27.0 | 31.0 | 31.0 | --- |
| 8 | 20.0 | 11.0 | 8.0 | 9.0 | 4.0 | 14.0 | 20.0 | 20.0 | 26.0 | 31.0 | 31.0 | --- |
| 9 | 20.0 | --- | 9.5 | 9.0 | 4.0 | 14.0 | 19.0 | 19.5 | 25.0 | --- | --- | --- |
| 10 | 19.0 | 11.0 | 10.0 | 9.0 | 4.0 | 15.0 | 19.0 | 19.0 | --- | 31.0 | 31.0 | --- |
| 11 | 18.0 | 11.0 | 10.0 | 8.5 | 5.0 | 14.0 | 19.0 | --- | 24.0 | 31.0 | 31.0 | --- |
| 12 | 16.0 | 10.0 | 10.0 | 8.5 | 5.0 | 16.0 | 17.0 | 21.0 | 24.0 | 31.0 | 31.0 | --- |
| 13 | 17.0 | 9.0 | 9.5 | 9.0 | 6.0 | 16.0 | 12.5 | 21.5 | 24.0 | 31.0 | 31.0 | --- |
| 14 | 17.0 | 9.0 | 9.0 | 9.5 | 6.5 | 15.0 | 12.0 | 21.0 | 25.0 | 31.0 | 31.0 | --- |
| 15 | 19.0 | 8.0 | 8.0 | 9.5 | 7.0 | 14.0 | 13.0 | 20.0 | 26.0 | 31.0 | 31.0 | --- |
| 16 | 18.0 | 8.0 | 8.0 | 10.0 | 7.0 | 15.0 | 15.0 | 20.0 | 27.0 | 31.0 | --- | --- |
| 17 | 18.0 | 11.0 | 8.0 | 11.0 | 6.0 | 15.0 | 16.0 | 21.0 | 27.0 | 31.0 | 31.0 | --- |
| 18 | 18.0 | 11.0 | 8.0 | 11.0 | 6.0 | 14.0 | 16.0 | 22.0 | 27.5 | 31.0 | 31.0 | --- |
| 19 | 18.0 | 12.0 | 8.0 | 11.0 | 6.0 | 13.0 | 16.0 | 22.0 | 27.0 | 31.0 | 31.0 | 25.0 |
| 20 | --- | 12.0 | 7.0 | 11.0 | 6.0 | 15.0 | 17.0 | 22.0 | 27.0 | 31.0 | 31.0 | 25.0 |
| 21 | 13.0 | 11.0 | 8.0 | 11.0 | 6.0 | 15.0 | 19.0 | 22.0 | 28.0 | 31.0 | 32.0 | 25.0 |
| 22 | 15.0 | 11.0 | 9.0 | 11.0 | 6.0 | 15.0 | --- | 22.0 | 27.0 | 31.0 | 32.0 | 25.0 |
| 23 | 17.0 | 11.0 | 9.0 | 10.0 | 6.0 | --- | 20.0 | 22.0 | 28.0 | 31.0 | 32.0 | 25.0 |
| 24 | 17.0 | 10.5 | 10.0 | 10.0 | 6.0 | 15.0 | 20.5 | 22.0 | 28.0 | 31.0 | 32.0 | 25.0 |
| 25 | 17.0 | 11.0 | 11.0 | 10.0 | 6.0 | 15.0 | 20.0 | 23.0 | 28.0 | 31.0 | 32.0 | --- |
| 26 | 17.0 | 11.0 | 11.0 | 9.0 | 6.0 | 14.0 | 18.0 | 24.0 | 28.0 | --- | 32.0 | --- |
| 27 | 16.0 | 11.0 | 11.0 | 10.0 | 6.0 | 14.0 | 17.0 | 24.0 | 28.0 | --- | 32.0 | --- |
| 28 | 17.0 | --- | 10.0 | 8.0 | 6.0 | 13.5 | 17.0 | 24.0 | 28.0 | 31.0 | 32.0 | --- |
| 29 | 17.0 | 10.0 | 10.0 | 7.0 | 6.0 | --- | 18.0 | 24.0 | 29.0 | 31.0 | --- | --- |
| 30 | 17.0 | 7.0 | 10.0 | 6.0 | --- | --- | 18.0 | 24.5 | 29.0 | 31.0 | 32.0 | --- |
| 31 | 17.0 | --- | 9.0 | 5.0 | --- | 15.5 | --- | 25.0 | --- | 31.0 | --- | --- |
| MEAN | 18.0 | 11.0 | 8.5 | 9.0 | 5.5 | 13.5 | 17.5 | 21.5 | 26.5 | 31.0 | 31.5 | 27.5 |

## 07346085 BIG CYPRESS CREEK NEAR KARNACK, TX

LOCATION.--Lat 32°41'48", long 94°11'15", Harrison County, Hydrologic Unit 11140304, near right bank at downstream side of bridge on State Highway 43, 0.6 mi (1.0 km) upstream from Mill Pond, 1.1 mi (1.8 km) downstream from Gum Slough (Haggerty Creek flows into Gum Slough), and 2.2 mi (3.5 km) north of Karnack.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--October 1979 to September 1980. Records for the period Nov. 1, 1975, to Sept. 30, 1979, published by the Corps of Engineers, New Orleans District as "Cypress Creek (Cypress Bayou) near Karnack, Tex."

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Elevation records fair. This is a stage-only station used to aid in the operation of Lake O' the Pines and Caddo Lake and located in the upper end of Caddo Lake 15 mi (24 km) above the dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 172.37 ft (52.538 m) Jan. 28, 1980; minimum, 167.08 ft (50.926 m) Sept. 29, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation, 174.20 ft (53.096 m) May 9, 1979; minimum, 166.72 ft (50.816 m) Oct. 23, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 172.37 ft (52.538 m) Jan. 28 at 2100 hours; minimum, 167.08 ft (50.926 m) Sept. 29.

ELEVATION, IN FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 170.92 | 168.87 | 169.34 | 170.60 | 171.23 | 169.99 | 170.54 | 171.30 | 169.74 | 168.69 | 167.91 | 167.68 |
| 2 | 170.85 | 168.88 | 169.35 | 170.48 | 171.08 | 169.90 | 170.48 | 171.34 | 169.51 | 168.63 | 167.89 | 167.65 |
| 3 | 170.76 | 168.93 | 169.34 | 170.37 | 171.01 | 169.76 | 170.48 | 171.34 | 169.35 | 168.61 | 167.87 | 167.61 |
| 4 | 170.67 | 169.00 | 169.26 | 170.25 | 171.01 | 169.66 | 170.46 | 171.33 | 169.22 | 168.57 | 167.87 | 167.57 |
| 5 | 170.59 | 169.05 | 169.21 | 170.15 | 171.02 | 169.54 | 170.44 | 171.22 | 169.11 | 168.53 | 167.87 | 167.53 |
| 6 | 170.50 | 169.08 | 169.19 | 170.05 | 171.01 | 169.47 | 170.39 | 171.06 | 169.03 | 168.49 | 167.87 | 167.48 |
| 7 | 170.40 | 169.12 | 169.16 | 169.94 | 171.03 | 169.40 | 170.33 | 170.91 | 168.95 | 168.47 | 167.85 | 167.42 |
| 8 | 170.19 | 169.14 | 169.16 | 169.85 | 171.36 | 169.33 | 170.24 | 170.77 | 169.16 | 168.44 | 167.83 | 167.37 |
| 9 | 169.97 | 169.31 | 169.16 | 169.75 | 171.80 | 169.30 | 170.17 | 170.64 | 169.18 | 168.42 | 167.80 | 167.30 |
| 10 | 169.70 | 169.30 | 169.16 | 169.67 | 171.87 | 169.26 | 170.09 | 170.50 | 169.14 | 168.39 | 167.77 | 167.30 |
| 11 | 169.43 | 169.24 | 169.19 | 169.60 | 171.90 | 169.31 | 170.14 | 170.54 | 169.07 | 168.36 | 167.75 | 167.28 |
| 12 | 169.25 | 169.22 | 169.34 | 169.59 | 171.90 | 169.30 | 170.20 | 170.66 | 169.03 | 168.34 | 167.74 | 167.24 |
| 13 | 169.16 | 169.21 | 169.52 | 169.55 | 171.94 | 169.25 | 170.77 | 170.51 | 168.99 | 168.32 | 167.74 | 167.22 |
| 14 | 169.04 | 169.20 | 169.70 | 169.50 | 171.98 | 169.31 | 170.90 | 170.41 | 168.98 | 168.29 | 167.74 | 167.21 |
| 15 | 168.95 | 169.19 | 169.68 | 169.47 | 171.95 | 169.33 | 170.89 | 170.64 | 168.95 | 168.12 | 167.73 | 167.19 |
| 16 | 168.88 | 169.18 | 169.64 | 169.45 | 171.92 | 169.38 | 170.94 | 171.14 | 168.90 | 168.11 | 167.72 | 167.15 |
| 17 | 168.86 | 169.17 | 169.60 | 169.45 | 171.85 | 169.39 | 171.20 | 171.13 | 168.85 | 168.08 | 167.70 | 167.21 |
| 18 | 168.81 | 169.16 | 169.59 | 169.43 | 171.75 | 169.52 | 171.45 | 170.99 | 168.81 | 168.04 | 167.78 | 167.24 |
| 19 | 168.77 | 169.15 | 169.57 | 169.43 | 171.62 | 169.66 | 171.59 | 170.82 | 168.84 | 168.01 | 167.66 | 167.21 |
| 20 | 168.74 | 169.15 | 169.57 | 169.51 | 171.48 | 169.80 | 171.68 | 170.66 | 168.93 | 167.98 | 167.64 | 167.19 |
| 21 | 168.72 | 169.45 | 169.57 | 169.64 | 171.34 | 170.02 | 171.67 | 170.58 | 168.91 | 168.06 | 167.61 | 167.18 |
| 22 | 168.74 | 169.57 | 169.65 | 170.78 | 171.24 | 170.21 | 171.58 | 170.53 | 168.97 | 168.04 | 167.60 | 167.15 |
| 23 | 168.72 | 169.53 | 169.85 | 171.03 | 171.14 | 170.43 | 171.47 | 170.46 | 168.95 | 168.01 | 167.60 | 167.16 |
| 24 | 168.70 | 169.49 | 170.40 | 171.10 | 171.04 | 170.52 | 171.31 | 170.41 | 168.91 | 168.00 | 167.59 | 167.13 |
| 25 | 168.68 | 169.46 | 170.89 | 171.30 | 170.92 | 170.56 | 171.38 | 170.35 | 168.87 | 167.98 | 167.59 | 167.14 |
| 26 | 168.67 | 169.45 | 171.30 | 171.69 | 170.71 | 170.59 | 171.14 | 170.29 | 168.86 | 167.97 | 167.60 | 167.14 |
| 27 | 168.65 | 169.45 | 171.42 | 172.22 | 170.42 | 170.67 | 170.93 | 170.22 | 168.84 | 168.04 | 167.61 | 167.13 |
| 28 | 168.65 | 169.45 | 171.27 | 172.36 | 170.16 | 170.61 | 170.79 | 170.19 | 168.81 | 168.17 | 167.66 | 167.09 |
| 29 | 168.68 | 169.44 | 171.07 | 172.10 | 170.07 | 170.72 | 170.81 | 170.15 | 168.76 | 168.09 | 167.70 | 167.27 |
| 30 | 168.80 | 169.40 | 170.90 | 171.73 | --- | 170.70 | 171.10 | 170.04 | 168.72 | 168.02 | 167.70 | 167.28 |
| 31 | 168.83 | --- | 170.74 | 171.44 | --- | 170.62 | --- | 169.92 | --- | 167.95 | 167.70 | --- |
| MAX | 170.92 | 169.57 | 171.42 | 172.36 | 171.98 | 170.72 | 171.68 | 171.34 | 169.74 | 168.69 | 167.91 | 167.68 |
| MIN | 168.65 | 168.87 | 169.16 | 169.43 | 170.07 | 169.25 | 170.09 | 169.92 | 168.72 | 167.95 | 167.59 | 167.09 |

CAL YR 1979 MAX - MIN -
WTR YR 1980 MAX 172.36 MIN 167.09

## 07346140 FRAZIER CREEK NEAR LINDEN, TX

LOCATION.--Lat 33°03'14", long 94°17'24", Cass County, Hydrologic Unit 11140306, on right bank at downstream side of bridge on U.S. Highway 59, 1.6 mi (2.6 km) upstream from Colley Creek, 3.7 mi (6.0 km) upstream from Johns Creek, and 5.3 mi (8.5 km) northeast of Linden.

DRAINAGE AREA.--48.0 $mi^2$ (124.3 $km^2$).

PERIOD OF RECORD.--August 1958 to June 1961 (low-flow partial record only), November 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 228.7 ft (69.71 m) National Geodetic Vertical Datum of 1929 (State Department of Highways and Public Transportation bridge plans).

REMARKS.--Records good. No known diversion. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--15 years (water years 1966-80), 43.8 $ft^3/s$ (1.240 $m^3/s$), 12.39 in/yr (315 mm/yr), 31,730 acre-ft/yr (39.1 $hm^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,010 $ft^3/s$ (142 $m^3/s$) Apr. 22, 1974, gage height, 12.51 ft (3.813 m); no flow at times for most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1945, 15.6 ft (4.75 m) Apr. 26, 27, 1958, from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 700 $ft^3/s$ (19.8 $m^3/s$) and maximum (*):

| Date | Time | Discharge | | Gage height | |
|---|---|---|---|---|---|
| | | ($ft^3/s$) | ($m^3/s$) | (ft) | (m) |
| Jan. 23 | 0100 | *1,280 | 36.2 | 9.73 | 2.966 |
| Apr. 14 | 0330 | 916 | 25.9 | 9.28 | 2.829 |

Minimum discharge, no flow Aug. 6 to Sept. 18, Sept. 22-27.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.3 | 96 | 20 | 60 | 90 | 51 | 88 | 62 | 17 | 3.5 | .60 | .00 |
| 2 | 8.8 | 40 | 20 | 53 | 74 | 56 | 72 | 71 | 15 | 3.0 | .43 | .00 |
| 3 | 8.2 | 26 | 19 | 61 | 69 | 44 | 65 | 99 | 13 | 2.8 | .32 | .00 |
| 4 | 7.8 | 21 | 19 | 72 | 64 | 44 | 59 | 75 | 11 | 2.5 | .21 | .00 |
| 5 | 7.5 | 19 | 20 | 57 | 67 | 45 | 52 | 53 | 9.7 | 2.2 | .04 | .00 |
| 6 | 7.4 | 17 | 22 | 50 | 75 | 40 | 50 | 45 | 8.5 | 2.0 | .00 | .00 |
| 7 | 7.2 | 14 | 20 | 49 | 62 | 40 | 50 | 41 | 7.4 | 1.8 | .00 | .00 |
| 8 | 7.1 | 10 | 17 | 43 | 114 | 41 | 48 | 39 | 20 | 1.5 | .00 | .00 |
| 9 | 6.9 | 82 | 16 | 40 | 376 | 39 | 42 | 38 | 41 | 1.2 | .00 | .00 |
| 10 | 6.8 | 135 | 15 | 39 | 338 | 38 | 39 | 34 | 21 | 1.1 | .00 | .00 |
| 11 | 6.7 | 105 | 17 | 42 | 211 | 37 | 41 | 32 | 13 | .92 | .00 | .00 |
| 12 | 8.2 | 42 | 27 | 39 | 153 | 124 | 122 | 58 | 9.6 | .78 | .00 | .00 |
| 13 | 8.1 | 29 | 103 | 35 | 117 | 128 | 404 | 130 | 8.2 | .65 | .00 | .00 |
| 14 | 7.2 | 23 | 111 | 35 | 99 | 58 | 752 | 65 | 6.7 | .52 | .00 | .00 |
| 15 | 6.7 | 22 | 55 | 35 | 88 | 46 | 320 | 55 | 5.8 | .40 | .00 | .00 |
| 16 | 6.9 | 20 | 41 | 43 | 80 | 138 | 182 | 186 | 5.3 | .34 | .00 | .00 |
| 17 | 8.9 | 19 | 33 | 61 | 68 | 509 | 123 | 241 | 5.0 | .23 | .00 | .00 |
| 18 | 28 | 18 | 28 | 44 | 64 | 273 | 105 | 121 | 4.8 | .20 | .00 | .00 |
| 19 | 24 | 24 | 28 | 38 | 64 | 140 | 85 | 64 | 5.3 | .17 | .00 | .06 |
| 20 | 11 | 25 | 28 | 101 | 63 | 98 | 70 | 67 | 18 | .14 | .00 | .05 |
| 21 | 8.5 | 31 | 28 | 178 | 58 | 78 | 60 | 47 | 38 | .11 | .00 | .02 |
| 22 | 8.6 | 93 | 88 | 620 | 54 | 64 | 54 | 41 | 18 | .17 | .00 | .00 |
| 23 | 12 | 100 | 176 | 811 | 51 | 69 | 48 | 38 | 24 | .18 | .00 | .00 |
| 24 | 8.7 | 57 | 423 | 290 | 47 | 117 | 45 | 34 | 15 | .14 | .00 | .00 |
| 25 | 7.6 | 43 | 314 | 186 | 45 | 112 | 125 | 31 | 9.1 | .11 | .00 | .00 |
| 26 | 7.2 | 36 | 166 | 138 | 42 | 71 | 396 | 30 | 6.8 | .10 | .00 | .00 |
| 27 | 6.8 | 32 | 104 | 106 | 41 | 68 | 280 | 27 | 5.8 | .49 | .00 | .00 |
| 28 | 6.7 | 27 | 76 | 86 | 42 | 117 | 150 | 23 | 5.1 | 1.3 | .00 | .29 |
| 29 | 7.0 | 22 | 73 | 95 | 42 | 147 | 87 | 22 | 4.5 | 2.2 | .00 | 2.4 |
| 30 | 10 | 21 | 92 | 115 | --- | 170 | 67 | 23 | 3.9 | 1.2 | .00 | 13 |
| 31 | 68 | --- | 74 | 118 | --- | 146 | --- | 19 | --- | .84 | .00 | --- |
| TOTAL | 343.8 | 1249 | 2273 | 3740 | 2758 | 3148 | 4081 | 1911 | 375.5 | 32.79 | 1.60 | 15.82 |
| MEAN | 11.1 | 41.6 | 73.3 | 121 | 95.1 | 102 | 136 | 61.6 | 12.5 | 1.06 | .052 | .53 |
| MAX | 68 | 135 | 423 | 811 | 376 | 509 | 752 | 241 | 41 | 3.5 | .60 | 13 |
| MIN | 6.7 | 10 | 15 | 35 | 41 | 37 | 39 | 19 | 3.9 | .10 | .00 | .00 |
| AC-FT | 682 | 2480 | 4510 | 7420 | 5470 | 6240 | 8090 | 3790 | 745 | 65 | 3.2 | 31 |

CAL YR 1979 TOTAL 21060.80 MEAN 57.7 MAX 821 MIN 5.8 AC-FT 41770
WTR YR 1980 TOTAL 19929.51 MEAN 54.5 MAX 811 MIN .00 AC-FT 39530

## SABINE RIVER BASIN

### 08017200 COWLEECH FORK SABINE RIVER AT GREENVILLE, TX

**LOCATION.**--Lat 33°07'58", long 96°04'36", Hunt County, Hydrologic Unit 12010001, on left bank 103 ft (31 m) downstream from centerline of downstream bridge on Interstate Highway 30 (U.S. Highway 67), 0.3 mi (0.5 km) downstream from Horse Creek, 0.9 mi (1.4 km) downstream from Louisiana and Arkansas Railroad Co. bridge, 1.8 mi (2.9 km) east of Greenville, and at mile 558.3 (898.3 km).

**DRAINAGE AREA.**--77.7 $mi^2$ (201.2 $km^2$).

**PERIOD OF RECORD.**--February 1959 to current year. Prior to October 1963, published as Sabine River at Greenville.

**REVISED RECORDS.**--WSP 1732: Drainage area. WSP 2122: 1960, 1963-65.

**GAGE.**--Water-stage recorder. Datum of gage is 485.07 ft (147.849 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Records good. During the current water year, the city of Greenville reported that 5,280 acre-ft (6.51 $hm^3$) was diverted from city lakes upstream from station and 1,330 acre-ft (1.64 $hm^3$) was diverted from Lake Tawakoni for municipal uses; 4,220 acre-ft (5.20 $hm^3$) of sewage effluent was returned to a tributary downstream. Extreme low flow is largely sustained by returned water from water treatment plant upstream. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--21 years (water years 1960-80), 62.0 $ft^3/s$ (1.756 $m^3/s$), 10.84 in/yr (275 mm/yr), 44,920 acre-ft/yr (55.4 $hm^3/yr$).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 10,800 $ft^3/s$ (306 $m^3/s$) May 7, 1969, gage height, 17.95 ft (5.471 m); no flow at 1964, 1969-70, 1972-73, and 1977-80.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since 1895, 22 ft (6.7 m) in May 1935, from information by local resident and city engineer of Greenville. Flood of July 3, 1913, reached a stage of 20 ft (6.1 m), from information by local resident.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 3,030 $ft^3/s$ (85.8 $m^3/s$) Jan. 22 at 2000 hours, gage height, 15.61 ft (4.758 m), no other peak above base of 3,000 $ft^3/s$ (85.0 $m^3/s$); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .09 | .47 | .00 | .43 | 4.7 | .39 | .28 | .09 | .02 | .37 | .00 | .37 |
| 2 | .02 | .07 | .07 | .31 | 2.9 | .32 | .25 | 154 | .02 | .36 | .00 | .29 |
| 3 | .00 | .00 | .12 | .16 | 2.1 | .28 | .23 | 55 | .02 | .31 | .00 | .01 |
| 4 | .00 | .00 | .16 | .09 | 1.6 | .43 | .20 | 11 | .01 | .35 | .00 | .00 |
| 5 | .00 | .00 | .18 | .06 | 1.4 | .39 | .20 | 1.8 | .01 | .30 | .00 | .00 |
| 6 | .00 | .00 | .18 | .05 | 1.4 | .39 | .16 | .39 | .02 | .28 | .00 | .00 |
| 7 | .00 | .00 | .41 | .02 | 1.3 | .43 | .18 | .25 | .06 | .16 | .00 | .00 |
| 8 | .00 | .00 | .49 | .02 | 298 | .47 | .20 | 2.1 | .04 | .17 | .00 | .00 |
| 9 | .00 | 1.0 | .44 | .02 | 748 | .39 | .18 | .25 | .04 | .27 | .00 | .01 |
| 10 | .00 | .24 | .77 | .03 | 139 | .43 | .16 | .09 | .02 | .39 | .00 | .01 |
| 11 | .00 | .02 | .86 | .27 | 151 | .39 | 1.7 | .06 | .02 | .37 | .00 | .00 |
| 12 | .00 | .00 | 15 | .44 | 112 | 2.5 | 4.0 | .20 | .02 | .35 | .00 | .00 |
| 13 | .00 | .04 | 7.9 | .21 | 63 | .83 | 106 | .09 | .02 | .35 | .00 | .00 |
| 14 | .00 | .09 | 1.2 | .13 | 30 | .39 | 102 | .06 | 1.1 | .26 | .00 | .00 |
| 15 | .00 | .11 | .43 | .11 | 18 | .39 | 11 | 41 | 1.3 | .39 | .00 | .00 |
| 16 | 1.7 | .11 | .16 | .37 | 11 | .28 | 1.8 | 957 | 1.2 | .45 | .00 | .00 |
| 17 | 1.3 | .11 | .04 | .33 | 7.1 | .25 | .84 | 108 | .42 | .44 | .00 | .00 |
| 18 | 2.0 | .11 | .01 | .31 | 5.1 | .20 | .28 | 29 | .04 | .40 | .00 | .00 |
| 19 | .81 | .11 | .01 | 3.2 | 3.8 | .23 | .25 | 10 | .02 | .15 | .00 | .78 |
| 20 | .53 | .49 | .02 | 29 | 3.1 | .25 | .23 | 4.2 | 32 | .02 | .00 | .00 |
| 21 | .45 | 1.2 | .07 | 683 | 2.4 | .23 | .16 | 2.1 | 3.1 | .00 | .00 | .00 |
| 22 | 3.4 | .68 | 13 | 1710 | 1.8 | .20 | .11 | 1.9 | 6.6 | .00 | .00 | .00 |
| 23 | 1.4 | .17 | 116 | 877 | 1.4 | .28 | .11 | .93 | 39 | .00 | .00 | .00 |
| 24 | .77 | .04 | 496 | 63 | .94 | .48 | .09 | .42 | 11 | .00 | .00 | .00 |
| 25 | .70 | .00 | 83 | 22 | .69 | .28 | 26 | .23 | 2.7 | .00 | .00 | .00 |
| 26 | .73 | .00 | 32 | 9.3 | .51 | .25 | 20 | .12 | 1.2 | .00 | .00 | .00 |
| 27 | .59 | .00 | 12 | 4.4 | .43 | .69 | 2.3 | .06 | .76 | .00 | .00 | 1.9 |
| 28 | .36 | .00 | 5.3 | 3.1 | .47 | 12 | .47 | .04 | .62 | .00 | .88 | 7.2 |
| 29 | .25 | .00 | 3.4 | 5.6 | .47 | 3.1 | .20 | .09 | .47 | .00 | .55 | 369 |
| 30 | 11 | .00 | 1.6 | 14 | --- | 1.1 | .13 | .04 | .31 | .00 | .13 | 169 |
| 31 | 3.1 | --- | .70 | 12 | --- | .38 | --- | .04 | --- | .00 | .41 | --- |
| TOTAL | 29.20 | 5.06 | 791.52 | 3438.96 | 1613.61 | 28.62 | 279.71 | 1380.55 | 102.16 | 6.14 | 1.97 | 548.57 |
| MEAN | .94 | .17 | 25.5 | 111 | 55.6 | .92 | 9.32 | 44.5 | 3.41 | .20 | .064 | 18.3 |
| MAX | 11 | 1.2 | 496 | 1710 | 748 | 12 | 106 | 957 | 39 | .45 | .88 | 369 |
| MIN | .00 | .00 | .00 | .02 | .43 | .20 | .09 | .04 | .01 | .00 | .00 | .00 |
| CFSM | .01 | .002 | .33 | 1.43 | .72 | .01 | .12 | .57 | .04 | .003 | .001 | .24 |
| IN. | .01 | .00 | .38 | 1.65 | .77 | .01 | .13 | .66 | .05 | .00 | .00 | .26 |
| AC-FT | 58 | 10 | 1570 | 6820 | 3200 | 57 | 555 | 2740 | 203 | 12 | 3.9 | 1090 |

CAL YR 1979 TOTAL 38202.63 MEAN 105 MAX 5000 MIN .00 CFSM 1.35 IN 18.29 AC-FT 75770
WTR YR 1980 TOTAL 8226.07 MEAN 22.5 MAX 1710 MIN .00 CFSM .29 IN 3.94 AC-FT 16320

## 08017300 SOUTH FORK SABINE RIVER NEAR QUINLAN, TX

LOCATION.--Lat 32°53'52", long 96°15'11", Hunt County, Hydrologic Unit 12010001, on right bank at downstream side of bridge on Farm Road 1565, 2.4 mi (3.9 km) upstream from Dry Creek, 6.2 mi (10.0 km) upstream from Bearpen Creek, 7 mi (11 km) southwest of Quinlan, and 25 mi (40 km) upstream from mouth.

DRAINAGE AREA.--78.7 $mi^2$ (203.8 $km^2$).

PERIOD OF RECORD.--February 1959 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 461.40 ft (140.635 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Records furnished by the city of Royse City show that 141 acre-ft (174,000 $m^3$) of sewage effluent was returned to the stream above this station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--21 years (water years 1960-80), 69.2 $ft^3/s$ (1.960 $m^3/s$), 11.94 in/yr (303 mm/yr), 50,140 acre-ft/yr (61.8 $hm^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,900 $ft^3/s$ (535 $m^3/s$) May 3, 1979, gage height, 17.72 ft (5.401 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 21 ft (6.4 m) July 29, 1902, from information by local resident. Flood of Apr. 27, 1957, reached a stage of 17.76 ft (5.413 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 $ft^3/s$ (85.0 $m^3/s$) and maximum (*):

| Date | Time | Discharge | | Gage height | |
|---|---|---|---|---|---|
| | | ($ft^3/s$) | ($m^3/s$) | (ft) | (m) |
| Dec. 23 | 2400 | 4,510 | 128 | 15.74 | 4.798 |
| Jan. 22 | 1500 | *8,140 | 231 | 16.28 | 4.962 |
| May 16 | 0645 | 3,580 | 101 | 15.57 | 4.746 |

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .02 | 5.5 | .00 | 2.4 | 11 | .32 | .50 | .49 | .01 | .00 | .00 | .00 |
| 2 | .01 | 2.4 | .00 | 2.4 | 6.4 | .21 | .31 | .23 | .00 | .00 | .00 | .00 |
| 3 | .03 | .93 | .00 | 2.3 | 5.0 | .10 | .18 | .22 | .00 | .00 | .00 | .00 |
| 4 | .04 | .49 | .00 | 2.0 | 3.9 | .09 | .09 | 1.1 | .00 | .00 | .00 | .00 |
| 5 | .00 | .24 | .00 | 1.4 | 3.4 | .15 | .06 | .44 | .00 | .00 | .00 | .00 |
| 6 | .00 | .12 | .00 | 1.6 | 2.8 | .21 | .05 | .16 | .00 | .00 | .00 | .00 |
| 7 | .00 | .06 | .00 | 1.9 | 2.2 | .21 | .03 | .07 | .00 | .00 | .00 | .00 |
| 8 | .00 | .04 | .00 | 1.8 | 623 | .21 | .01 | .04 | .00 | .00 | .00 | .00 |
| 9 | .00 | 1.8 | .00 | 1.7 | 1210 | .21 | .02 | .02 | .00 | .00 | .00 | .00 |
| 10 | .00 | 1.2 | .00 | 1.7 | 183 | .18 | .02 | .00 | .00 | .00 | .00 | .00 |
| 11 | .00 | .59 | .00 | 1.8 | 306 | .12 | .01 | .00 | .00 | .00 | .00 | .00 |
| 12 | .00 | .49 | .03 | 1.7 | 117 | .13 | .00 | .00 | .00 | .00 | .00 | .00 |
| 13 | .00 | .40 | 18 | 2.0 | 40 | .11 | 266 | .00 | .00 | .00 | .00 | .00 |
| 14 | .00 | .21 | 13 | 1.9 | 18 | .09 | 336 | .00 | .00 | .00 | .00 | .00 |
| 15 | .00 | .09 | 3.6 | 1.8 | 12 | .08 | 28 | 356 | .00 | .00 | .00 | .00 |
| 16 | .00 | .06 | 1.0 | 1.9 | 7.3 | .06 | 6.8 | 2470 | .00 | .00 | .00 | .00 |
| 17 | .00 | .06 | .32 | 2.0 | 5.3 | .07 | 3.1 | 203 | .00 | .00 | .00 | .00 |
| 18 | .00 | .08 | .12 | 2.0 | 5.2 | .08 | 1.6 | 17 | .00 | .00 | .00 | .00 |
| 19 | .00 | .06 | .10 | 2.6 | 5.6 | .10 | .96 | 5.7 | .00 | .00 | .00 | .00 |
| 20 | .00 | .05 | .09 | 27 | 5.5 | .09 | .59 | 2.7 | .00 | .00 | .00 | .00 |
| 21 | .00 | .15 | .08 | 165 | 3.0 | .07 | .30 | 1.4 | .00 | .00 | .00 | .00 |
| 22 | .00 | .28 | 7.1 | 4930 | 2.1 | .07 | .14 | .70 | 1.2 | .00 | .00 | .00 |
| 23 | .00 | .12 | 916 | 2380 | 1.7 | .06 | .09 | .39 | .16 | .00 | .00 | .00 |
| 24 | .00 | .06 | 2190 | 98 | 1.1 | .07 | .05 | .28 | .00 | .00 | .00 | .00 |
| 25 | .00 | .05 | 125 | 28 | .81 | .16 | 2.9 | .33 | .00 | .00 | .00 | .00 |
| 26 | .00 | .03 | 20 | 14 | .59 | .17 | 71 | .27 | .00 | .00 | .00 | .00 |
| 27 | .00 | .01 | 8.8 | 8.1 | .44 | .24 | 13 | .16 | .00 | .00 | .00 | .00 |
| 28 | .00 | .00 | 5.3 | 5.3 | .40 | 2.4 | 4.0 | .09 | .00 | .00 | .00 | .00 |
| 29 | .00 | .00 | 3.8 | 20 | .40 | 3.5 | 1.8 | .07 | .00 | .00 | .00 | 335 |
| 30 | .00 | .00 | 2.8 | 39 | --- | 1.9 | .95 | .06 | .00 | .00 | .00 | 355 |
| 31 | .00 | --- | 2.4 | 28 | --- | .96 | --- | .05 | --- | .00 | .00 | --- |
| TOTAL | .10 | 15.57 | 3317.54 | 7779.3 | 2583.14 | 12.42 | 738.56 | 3060.97 | 1.37 | .00 | .00 | 690.00 |
| MEAN | .003 | .52 | 107 | 251 | 89.1 | .40 | 24.6 | 98.7 | .046 | .000 | .000 | 23.0 |
| MAX | .04 | 5.5 | 2190 | 4930 | 1210 | 3.5 | 336 | 2470 | 1.2 | .00 | .00 | 355 |
| MIN | .00 | .00 | .00 | 1.4 | .40 | .06 | .00 | .00 | .00 | .00 | .00 | .00 |
| CFSM | .000 | .007 | 1.36 | 3.19 | 1.13 | .005 | .31 | 1.25 | .001 | .000 | .000 | .29 |
| IN. | .00 | .01 | 1.57 | 3.68 | 1.22 | .01 | .35 | 1.45 | .00 | .00 | .00 | .33 |
| AC-FT | .2 | 31 | 6580 | 15430 | 5120 | 25 | 1460 | 6070 | 2.7 | .00 | .00 | 1370 |

CAL YR 1979 TOTAL 52217.31 MEAN 143 MAX 8430 MIN .00 CFSM 1.82 IN 24.68 AC-FT 103600
WTR YR 1980 TOTAL 18198.97 MEAN 49.7 MAX 4930 MIN .00 CFSM .63 IN 8.60 AC-FT 36100

## 08017400 LAKE TAWAKONI NEAR WILLS POINT, TX

**LOCATION.**--Lat 32°48'40", long 95°54'56", Rains-Van Zandt County line, Hydrologic Unit 12010001, in stairwell at left end of spillway of Iron Bridge Dam on Sabine River, 750 ft (229 m) upstream from bridge on Farm Road 47, 3 mi (5 km) upstream from McBee Creek, 9.0 mi (14.5 km) northeast of Wills Point, and at mile 514.5 (827.8 km).

**DRAINAGE AREA.**--756 $mi^2$ (1,958 $km^2$).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1960 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

**REMARKS.**--Lake is formed by a rolled earthfill dam 29,560 ft (9,010 m) long, including a 480-foot (146 m) uncontrolled concrete ogee spillway. Outlet works consist of two 4- by 6-foot (1.2 by 1.8 m) sluice gates and two 20-inch (508 mm) steel pipes controlled by service valves. Closure of earthen dam began July 1, 1960, and deliberate impoundment of water began Oct. 7, 1960. Capacity table is based on a 1956 survey. Records furnished by Sabine River Authority show that during year the city of Dallas diverted 43,560 acre-ft (53.7 $hm^3$) of water for municipal use in the Trinity River basin and that various other users in the Sabine River basin diverted 7,480 acre-ft (9.22 $hm^3$). Lake was built for water conservation. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

|  | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 454.0 | - |
| Design flood | 446.2 | 1,290,000 |
| Crest of spillway | 437.5 | 936,200 |
| Lowest intake to wet well (invert) | 416.5 | 342,700 |
| Lowest gated outlet (invert) | 378.0 | 0 |

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 1,130,000 acre-ft (1.39 $km^3$) May 1, 1966, elevation, 442.58 ft (134.900 m); minimum since lake first filled in May 1965, 802,700 acre-ft (990 $hm^3$) Oct. 21, 1972, elevation, 433.65 ft (132.177 m).

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 964,300 acre-ft (1.19 $km^3$) Feb. 11, elevation, 438.27 ft (133.585 m); minimum, 850,600 acre-ft (1.05 $km^3$) Sept. 24, elevation, 435.07 ft (132.609 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

|  |  |  |  |
|---|---|---|---|
| 435.0 | 848,200 | 438.0 | 954,300 |
| 436.0 | 882,800 | 439.0 | 991,200 |
| 437.0 | 918,200 |  |  |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 922500 | 905100 | 890600 | 917500 | 953200 | 947100 | 933000 | 940200 | 942400 | 926100 | 897600 | 864100 |
| 2 | 920700 | 904000 | 888100 | 917500 | 952500 | 940900 | 933400 | 940900 | 941700 | 925400 | 896200 | 864100 |
| 3 | 920700 | 903000 | 888100 | 917800 | 951800 | 939500 | 933700 | 940900 | 940900 | 924700 | 894100 | 863100 |
| 4 | 918500 | 901500 | 888100 | 917800 | 951400 | 942800 | 931900 | 940900 | 939900 | 924000 | 893800 | 862400 |
| 5 | 917100 | 901500 | 888100 | 916000 | 950700 | 939900 | 931200 | 940600 | 938800 | 922900 | 892300 | 860600 |
| 6 | 916400 | 901200 | 886700 | 919300 | 949300 | 938800 | 930800 | 940900 | 938400 | 922100 | 892000 | 859600 |
| 7 | 914600 | 899800 | 886300 | 916400 | 949300 | 939100 | 931500 | 940200 | 938400 | 921100 | 890600 | 858900 |
| 8 | 914300 | 898700 | 885600 | 915300 | 956200 | 938800 | 930500 | 940200 | 937300 | 920000 | 889900 | 859900 |
| 9 | 914600 | 903300 | 885300 | 914600 | 962400 | 938800 | 929400 | 938100 | 936600 | 919300 | 888400 | 859600 |
| 10 | 912200 | 901200 | 884600 | 915300 | 963200 | 938800 | 927600 | 937700 | 935500 | 918500 | 887400 | 858900 |
| 11 | 911800 | 899400 | 886300 | 915300 | 964300 | 939100 | 933000 | 937700 | 934400 | 917500 | 886300 | 857900 |
| 12 | 911100 | 899400 | 892000 | 913900 | 962800 | 940600 | 930500 | 940900 | 933400 | 916400 | 885300 | 856800 |
| 13 | 909300 | 898700 | 890900 | 914300 | 961700 | 938100 | 937000 | 941300 | 932300 | 915300 | 884600 | 856100 |
| 14 | 908300 | 898400 | 889900 | 913600 | 960600 | 937300 | 940900 | 941300 | 930800 | 913900 | 882400 | 855800 |
| 15 | 909000 | 897600 | 889500 | 914600 | 962400 | 937000 | 941300 | 951400 | 930100 | 912500 | 881400 | 855100 |
| 16 | 909000 | 897300 | 891600 | 915000 | 958800 | 937700 | 940900 | 957300 | 929400 | 911100 | 879700 | 853400 |
| 17 | 909000 | 896600 | 888100 | 915000 | 955400 | 936600 | 941300 | 961000 | 928700 | 909700 | 879300 | 853700 |
| 18 | 908600 | 895900 | 887000 | 914600 | 953200 | 935500 | 940200 | 960200 | 927900 | 908600 | 877900 | 853400 |
| 19 | 906800 | 896600 | 887000 | 916800 | 953600 | 935500 | 939500 | 959100 | 927200 | 907200 | 876900 | 853700 |
| 20 | 907200 | 895500 | 886700 | 918200 | 952500 | 935200 | 939100 | 956900 | 929700 | 906100 | 876200 | 852300 |
| 21 | 906100 | 900500 | 891300 | 925400 | 951800 | 934100 | 939100 | 955400 | 930100 | 904000 | 875500 | 851600 |
| 22 | 909300 | 898000 | 896600 | 947100 | 951100 | 933000 | 938800 | 952900 | 932600 | 905800 | 874500 | 851600 |
| 23 | 906800 | 895200 | 908300 | 959900 | 950700 | 938400 | 938100 | 951400 | 933000 | 904400 | 873100 | 852000 |
| 24 | 906100 | 895200 | 915000 | 963600 | 950000 | 933000 | 938100 | 950300 | 932300 | 903300 | 871700 | 850600 |
| 25 | 905400 | 894800 | 918200 | 962800 | 948500 | 932300 | 943800 | 948900 | 931500 | 902200 | 871000 | 852000 |
| 26 | 904000 | 892700 | 918500 | 963200 | 947100 | 931500 | 943100 | 948200 | 930800 | 900800 | 869600 | 851300 |
| 27 | 904000 | 895200 | 918900 | 959100 | 946000 | 934100 | 941300 | 947100 | 930100 | 903000 | 869300 | 851300 |
| 28 | 904000 | 893400 | 918900 | 959100 | 946000 | 934800 | 940600 | 946400 | 928700 | 902600 | 868600 | 852000 |
| 29 | 903000 | 892000 | 919600 | 957300 | 948200 | 935200 | 940200 | 945300 | 927900 | 901900 | 867900 | 861000 |
| 30 | 906500 | 890600 | 919300 | 959100 | --- | 934100 | 939900 | 944600 | 926800 | 900100 | 866500 | 862700 |
| 31 | 906800 | --- | 918900 | 956200 | --- | 932300 | --- | 942800 | --- | 899100 | 865500 | --- |
| MAX | 922500 | 905100 | 919600 | 963600 | 964300 | 947100 | 943800 | 961000 | 942400 | 926100 | 897600 | 864100 |
| MIN | 903000 | 890600 | 884600 | 913600 | 946000 | 931500 | 927600 | 937700 | 926800 | 899100 | 865500 | 850600 |
| (†) | 436.68 | 436.22 | 437.02 | 438.05 | 437.83 | 437.39 | 437.60 | 437.68 | 437.24 | 436.46 | 435.50 | 435.42 |
| (‡) | -16400 | -16200 | +28300 | +37300 | -8000 | -15900 | +7600 | +2900 | -16000 | -27700 | -33600 | -2800 |
| (††) | 6160 | 6970 | 5400 | 260 | 685 | 1060 | 1100 | 1900 | 5460 | 7060 | 9280 | 5700 |

CAL YR 1979 MAX 1035000 MIN 825800 ‡ +92400 †† 61390
WTR YR 1980 MAX 964300 MIN 850600 ‡ -60500 †† 51040

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal use.

## 08017400 LAKE TAWAKONI NEAR WILLS POINT, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| APR | | | | | | | | | |
| 17... | 1155 | 195 | 10.0 | 74 | 0 | 25 | 2.7 | 10 | .5 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| APR | | | | | | | | |
| 17... | 3.3 | 92 | 0 | 14 | 6.0 | .2 | 1.2 | 108 |

## 08017410 SABINE RIVER NEAR WILLS POINT, TX

**LOCATION.**--Lat 32°48'34", long 95°54'46", Van Zandt County, Hydrologic Unit 12010001, on right bank at downstream side of bridge on Farm Road 47, 750 ft (229 m) downstream from Iron Bridge Dam which forms Lake Tawakoni, 3.0 mi (4.8 km) upstream from McBee Creek, 9.0 mi (14.5 km) northeast of Wills Point, and at mile 514.3 (827.5 km).

**DRAINAGE AREA.**--756 mi² (1,958 km²).

**PERIOD OF RECORD.**--October 1970 to current year.

**GAGE.**--Water-stage recorder and crest-stage gage. Datum of gage is 370.00 ft (112.776 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Records good except those for Nov. 23 to Dec. 20, Jan. 7-30, and May 10-22, which are fair. Flow regulated by Lake Tawakoni (see station 08017400).

**AVERAGE DISCHARGE.**--10 years, 424 ft³/s (12.01 m³/s), 307,200 acre-ft/yr (379 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 13,600 ft³/s (385 m³/s) Dec. 11, 1971, gage height, 18.5 ft (5.64 m), from graph based on gage readings; no flow most years.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum discharge since construction of Iron Bridge Dam in 1960, about 21,000 ft³/s (595 m³/s) May 1, 1966, from theoretical rating curve of flow over dam 750 ft (229 m) upstream.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 1,530 ft³/s (43.3 m³/s) Feb. 16 at 1230 hours, gage height, 13.10 ft (3.993 m); no flow Oct. 24-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.2 | 7.6 | .50 | 7.2 | 650 | 909 | 4.0 | 106 | 181 | 2.4 | 16 | 11 |
| 2 | 30 | 1.5 | .44 | .40 | 532 | 374 | 7.5 | 188 | 163 | 5.0 | 10 | 15 |
| 3 | 58 | .72 | .40 | 181 | 494 | 40 | 148 | 184 | 155 | 1.2 | 11 | 18 |
| 4 | 56 | .96 | .40 | 6.2 | 438 | 85 | 127 | 138 | 129 | .83 | 12 | 9.6 |
| 5 | 1.0 | 1.3 | 2.5 | 3.4 | 456 | 368 | 7.4 | 123 | 91 | .94 | 15 | 10 |
| 6 | 1.0 | 35 | .62 | 7.4 | 409 | 35 | 6.0 | 127 | 57 | .94 | 23 | 13 |
| 7 | .71 | 1.0 | .50 | 200 | 333 | 17 | 13 | 118 | 34 | .94 | 23 | 13 |
| 8 | .84 | .63 | .50 | 150 | 578 | 121 | 263 | 180 | 138 | 1.0 | 22 | 12 |
| 9 | 111 | 26 | .44 | 100 | 1080 | 21 | 105 | 109 | 52 | 4.1 | 12 | 17 |
| 10 | 18 | 13 | .40 | 10 | 1030 | 16 | 8.5 | 100 | 21 | 1.0 | 12 | 13 |
| 11 | .69 | 2.4 | .40 | 4.0 | 1030 | 23 | 56 | 105 | 5.2 | 1.1 | 24 | 12 |
| 12 | .52 | .55 | 2.6 | 2.0 | 1040 | 49 | 352 | 150 | 2.2 | 1.0 | 29 | 18 |
| 13 | .71 | 3.1 | .62 | .70 | 978 | 322 | 461 | 500 | 2.5 | 1.0 | 24 | 12 |
| 14 | .58 | .33 | .50 | .50 | 930 | 5.9 | 400 | 180 | 1.7 | 1.1 | 24 | 12 |
| 15 | .62 | .50 | .50 | 1.5 | 1010 | 3.1 | 141 | 250 | 2.0 | 18 | 23 | 12 |
| 16 | 3.3 | .47 | .44 | 2.0 | 1270 | 3.5 | 116 | 550 | 2.8 | 57 | 22 | 20 |
| 17 | .79 | .56 | .40 | 1.0 | 793 | 466 | 160 | 750 | 7.4 | 40 | 25 | 17 |
| 18 | .42 | .62 | 2.6 | .70 | 633 | 23 | 244 | 800 | 1.5 | 19 | 13 | 9.6 |
| 19 | .42 | .62 | .50 | .50 | 596 | 4.1 | 95 | 750 | 4.8 | 18 | 22 | 12 |
| 20 | .54 | .53 | .40 | .40 | 564 | 216 | 74 | 650 | 30 | 20 | 13 | 12 |
| 21 | .58 | 14 | .61 | 10 | 530 | 42 | 58 | 600 | 4.0 | 23 | 11 | 12 |
| 22 | 116 | 70 | 160 | 150 | 474 | 1.2 | 46 | 550 | 16 | 25 | 11 | 14 |
| 23 | 11 | .56 | 230 | 500 | 465 | 34 | 44 | 515 | 1.7 | 21 | 15 | 15 |
| 24 | .00 | .50 | 451 | 900 | 495 | 288 | 56 | 449 | 2.5 | 19 | 13 | 11 |
| 25 | .00 | .40 | 17 | 1000 | 580 | 15 | 169 | 413 | 1.9 | 21 | 16 | 11 |
| 26 | .00 | .30 | .31 | 1000 | 351 | .36 | 382 | 382 | 5.3 | 22 | 10 | 12 |
| 27 | .52 | .30 | .27 | 900 | 270 | 1.5 | 299 | 347 | .99 | 20 | 14 | 12 |
| 28 | .31 | 2.6 | 3.7 | 840 | 247 | 8.3 | 203 | 319 | 1.3 | 20 | 11 | 13 |
| 29 | .42 | .62 | 21 | 760 | 273 | 132 | 125 | 285 | 2.5 | 26 | 11 | 19 |
| 30 | 8.2 | .50 | 44 | 800 | --- | 226 | 90 | 255 | 2.1 | 20 | 12 | 49 |
| 31 | 20 | --- | 65 | 901 | --- | 7.7 | --- | 226 | --- | 11 | 11 | --- |
| TOTAL | 443.37 | 187.17 | 1008.55 | 8439.90 | 18529 | 3857.66 | 4260.4 | 10399 | 1119.39 | 422.55 | 510 | 436.2 |
| MEAN | 14.3 | 6.24 | 32.5 | 272 | 639 | 124 | 142 | 335 | 37.3 | 13.6 | 16.5 | 14.5 |
| MAX | 116 | 70 | 451 | 1000 | 1270 | 909 | 461 | 800 | 181 | 57 | 29 | 49 |
| MIN | .00 | .30 | .27 | .40 | 247 | .36 | 4.0 | 100 | .99 | .83 | 10 | 9.6 |
| AC-FT | 879 | 371 | 2000 | 16740 | 36750 | 7650 | 8450 | 20630 | 2220 | 838 | 1010 | 865 |

CAL YR 1979 TOTAL 179937.29 MEAN 493 MAX 7350 MIN .00 AC-FT 356900
WTR YR 1980 TOTAL 49613.19 MEAN 136 MAX 1270 MIN .00 AC-FT 98410

## 08018500 SABINE RIVER NEAR MINEOLA, TX

LOCATION.--Lat 32°46'49", long 95°29'08", Wood County, Hydrologic Unit 12010001, on left bank 5 ft (2 m) downstream from bridge on U.S. Highway 69, 3.5 mi (5.6 km) south of Mineola, 4.5 mi (7.2 km) upstream from Missouri Pacific Railway Lines bridge, 16.2 mi (26.1 km) upstream from Lake Fork Creek, and at mile 461.1 (741.9 km).

DRAINAGE AREA.--1,357 mi² (3,515 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1939 to September 1959, October 1967 to current year. Gage-height records collected at this site since July 1946 are contained in reports published by the National Weather Service.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 304.16 ft (92.708 m) National Geodetic Vertical Datum of 1929. May 12, 1939, to Dec. 11, 1955, at site 55 ft (17 m) upstream from downstream side of bridge; Dec. 12, 1955, to Dec. 12, 1959, at downstream side of bridge; Oct. 1, 1967, to Sept. 12, 1968, nonrecording gage at downstream side of bridge; Sept. 13, 1968, to Oct. 23, 1974, water-stage recorder at downstream side of bridge; Oct. 24, 1974, to Oct. 16, 1975, at site on right bank 75 ft (23 m) downstream from bridge. All gages at present datum.

REMARKS.--Water-discharge records good. Flow partly regulated since October 1960 by Lake Tawakoni (station 08017400) located 53 mi (85 km) upstream and since September 1962 by Lake Holbrook, capacity 7,990 acre-ft (9.85 hm³), located on Keys Creek, tributary to Sabine River 8.0 mi (12.9 km) upstream. Flow is affected at times by discharge from the flood-detention pool of a floodwater-retarding structure with a detention capacity of 5,530 acre-ft (6.82 hm³). This structure controls runoff from 9.70 mi² (25.1 km²) in the Mill Creek drainage basin.

AVERAGE DISCHARGE.--20 years (water years 1940-59) prior to regulation by Lake Tawakoni, 1,054 ft³/s (29.85 m³/s), 763,600 acre-ft/yr (942 hm³/yr); 13 years (water years 1968-80) regulated, 960 ft³/s (27.19 m³/s) 695,500 acre-ft/yr (858 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,000 ft³/s (2,150 m³/s) Apr. 1, 1945, gage height, 24.00 ft (7.315 m); maximum gage height, 24.37 ft (7.428 m) June 8, 1943; no flow at times.
Maximum stage since at least 1890, that of June 8, 1943.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,870 ft³/s (166 m³/s) Jan. 25 at 1400 hours, gage height, 17.50 ft (5.334 m); minimum, 0.71 ft³/s (0.020 m³/s) July 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 56 | 102 | 64 | 132 | 1390 | 297 | 909 | 272 | 235 | 6.5 | 23 | 34 |
| 2 | 54 | 87 | 93 | 152 | 1300 | 310 | 603 | 194 | 205 | 5.5 | 22 | 20 |
| 3 | 53 | 85 | 102 | 143 | 1220 | 531 | 296 | 179 | 169 | 4.8 | 21 | 13 |
| 4 | 51 | 88 | 85 | 102 | 1070 | 656 | 190 | 228 | 139 | 4.3 | 19 | 9.9 |
| 5 | 51 | 81 | 74 | 105 | 763 | 378 | 174 | 261 | 122 | 3.6 | 15 | 8.4 |
| 6 | 57 | 71 | 67 | 156 | 630 | 193 | 224 | 202 | 109 | 3.0 | 14 | 7.6 |
| 7 | 92 | 65 | 63 | 104 | 539 | 305 | 173 | 157 | 88 | 2.4 | 16 | 7.7 |
| 8 | 78 | 62 | 60 | 76 | 617 | 231 | 121 | 167 | 70 | 2.0 | 10 | 9.6 |
| 9 | 63 | 64 | 58 | 75 | 1290 | 136 | 96 | 313 | 56 | 1.8 | 8.9 | 11 |
| 10 | 56 | 71 | 58 | 108 | 1850 | 138 | 175 | 354 | 55 | 1.5 | 9.3 | 10 |
| 11 | 54 | 86 | 61 | 82 | 2410 | 156 | 218 | 259 | 94 | 1.2 | 14 | 12 |
| 12 | 67 | 136 | 82 | 62 | 2820 | 129 | 229 | 146 | 62 | 1.0 | 18 | 12 |
| 13 | 94 | 132 | 131 | 53 | 2840 | 186 | 581 | 112 | 37 | .90 | 14 | 9.7 |
| 14 | 72 | 100 | 111 | 79 | 2470 | 221 | 1960 | 262 | 25 | .82 | 10 | 8.7 |
| 15 | 60 | 79 | 207 | 84 | 1980 | 309 | 2970 | 551 | 19 | .74 | 9.5 | 8.6 |
| 16 | 56 | 70 | 269 | 92 | 1600 | 291 | 3910 | 1090 | 15 | .80 | 8.9 | 7.5 |
| 17 | 55 | 65 | 168 | 100 | 1380 | 1090 | 4300 | 1500 | 12 | .98 | 18 | 7.0 |
| 18 | 54 | 62 | 113 | 89 | 1250 | 1350 | 3020 | 2020 | 11 | 1.2 | 17 | 7.6 |
| 19 | 53 | 62 | 95 | 83 | 1220 | 1240 | 1520 | 3320 | 9.1 | 1.4 | 18 | 7.7 |
| 20 | 52 | 64 | 102 | 268 | 1160 | 1100 | 789 | 4480 | 13 | 6.6 | 16 | 7.7 |
| 21 | 52 | 67 | 92 | 563 | 982 | 645 | 347 | 3900 | 19 | 29 | 12 | 8.8 |
| 22 | 53 | 82 | 154 | 1700 | 777 | 304 | 179 | 2760 | 17 | 24 | 12 | 11 |
| 23 | 54 | 78 | 410 | 3210 | 638 | 276 | 135 | 1810 | 18 | 21 | 13 | 9.9 |
| 24 | 54 | 73 | 903 | 4120 | 547 | 182 | 111 | 1320 | 25 | 22 | 13 | 8.2 |
| 25 | 79 | 82 | 1220 | 5550 | 500 | 132 | 406 | 994 | 19 | 25 | 11 | 11 |
| 26 | 98 | 102 | 1450 | 5160 | 487 | 246 | 1420 | 703 | 20 | 24 | 7.0 | 11 |
| 27 | 76 | 87 | 1660 | 3770 | 531 | 240 | 1510 | 518 | 20 | 22 | 5.3 | 11 |
| 28 | 65 | 76 | 1480 | 2840 | 484 | 373 | 1300 | 424 | 15 | 24 | 5.3 | 11 |
| 29 | 59 | 70 | 871 | 2100 | 352 | 737 | 947 | 362 | 11 | 23 | 7.7 | 27 |
| 30 | 66 | 66 | 311 | 1700 | --- | 1070 | 533 | 316 | 8.3 | 24 | 21 | 282 |
| 31 | 128 | --- | 153 | 1500 | --- | 1060 | --- | 276 | --- | 24 | 47 | --- |
| TOTAL | 2012 | 2415 | 10767 | 34358 | 35097 | 14512 | 29346 | 29450 | 1717.4 | 313.04 | 455.9 | 610.6 |
| MEAN | 64.9 | 80.5 | 347 | 1108 | 1210 | 468 | 978 | 950 | 57.2 | 10.1 | 14.7 | 20.4 |
| MAX | 128 | 136 | 1660 | 5550 | 2840 | 1350 | 4300 | 4480 | 235 | 29 | 47 | 282 |
| MIN | 51 | 62 | 58 | 53 | 352 | 129 | 96 | 112 | 8.3 | .74 | 5.3 | 7.0 |
| AC-FT | 3990 | 4790 | 21360 | 68150 | 69610 | 28780 | 58210 | 58410 | 3410 | 621 | 904 | 1210 |

CAL YR 1979 TOTAL 370768.00 MEAN 1016 MAX 12300 MIN 11 AC-FT 735400
WTR YR 1980 TOTAL 161053.94 MEAN 440 MAX 5550 MIN .74 AC-FT 319500

## SABINE RIVER BASIN

## 08018500 SABINE RIVER NEAR MINEOLA, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 11,400 micromhos June 3, 1971; minimum daily, 70 micromhos Dec. 12, 1971.
WATER TEMPERATURES: Maximum daily, 30.0°C on several days during July 1980; minimum daily, 0.0°C Jan. 15, Feb. 1, 1979.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 10,900 micromhos Sept. 17; minimum daily, 114 micromhos May 20.
WATER TEMPERATURES: Maximum daily, 30.0°C on several days during July; minimum daily, 4.0°C Feb. 10.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 18... | 1020 | 54 | 300 | 6.6 | 20.5 | 6.7 | 74 | 1.3 | 64 | 36 |
| DEC 06... | 1340 | 66 | 610 | 6.9 | 9.5 | 9.8 | 86 | 1.0 | 81 | 48 |
| JAN 27... | 0700 | 4010 | 140 | -- | 9.0 | -- | -- | -- | 33 | 13 |
| FEB 12... | 1405 | 3110 | 198 | 6.9 | 4.0 | 11.2 | 85 | 2.6 | 45 | 22 |
| MAR 31... | 1200 | 1070 | 466 | 7.1 | 15.0 | 8.1 | 80 | 2.3 | 98 | 65 |
| JUN 28... | 0700 | 15 | 2600 | -- | 29.0 | -- | -- | -- | 180 | 100 |
| JUL 28... | 1030 | 13 | 740 | 7.6 | 27.0 | 4.2 | 52 | 2.8 | 91 | 9 |
| AUG 27... | 0855 | 5.1 | 1010 | -- | 27.0 | -- | -- | -- | 140 | 45 |
| SEP 08... | 1100 | 9.7 | 3400 | 7.8 | 26.5 | 5.1 | 65 | 7.3 | 140 | 78 |

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 18... | 17 | 5.3 | 29 | 1.6 | 4.6 | 35 | 0 | 40 | 42 | .2 |
| DEC 06... | 21 | 6.9 | 84 | 4.1 | 4.8 | 40 | 0 | 59 | 120 | .1 |
| JAN 27... | 9.2 | 2.4 | 13 | 1.0 | 4.1 | 24 | 0 | 20 | 22 | .1 |
| FEB 12... | 12 | 3.6 | 19 | 1.2 | 3.5 | 28 | 0 | 30 | 24 | .1 |
| MAR 31... | 24 | 9.3 | 46 | 2.0 | 4.6 | 41 | 0 | 84 | 70 | .1 |
| JUN 28... | 54 | 12 | 450 | 14 | 5.5 | 100 | 0 | 80 | 750 | .3 |
| JUL 28... | 27 | 5.7 | 100 | 4.6 | 4.3 | 100 | 0 | 37 | 150 | .4 |
| AUG 27... | 41 | 7.9 | 160 | 6.0 | 5.4 | 110 | 0 | 41 | 260 | .3 |
| SEP 08... | 44 | 7.8 | 650 | 24 | 6.4 | 78 | 0 | 73 | 1000 | .3 |

| DATE | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 18... | 9.9 | 165 | .15 | .030 | .18 | .120 | .79 | .91 | .050 |
| DEC 06... | 11 | 327 | .22 | .020 | .24 | .050 | 1.9 | 1.9 | -- |
| JAN 27... | 5.9 | 89 | -- | -- | -- | -- | -- | -- | -- |
| FEB 12... | 5.6 | 112 | .17 | .010 | .18 | .000 | .85 | .85 | .110 |
| MAR 31... | 8.5 | 267 | -- | -- | -- | -- | -- | 1.3 | .130 |
| JUN 28... | 4.9 | 1410 | -- | -- | -- | -- | -- | -- | -- |
| JUL 28... | 2.8 | 377 | .00 | .000 | .00 | .110 | 1.2 | 1.3 | .110 |
| AUG 27... | 3.6 | 573 | -- | -- | -- | -- | -- | -- | -- |
| SEP 08... | 3.5 | 1820 | .00 | .010 | .00 | .010 | 2.1 | 2.1 | .160 |

## 08018500 SABINE RIVER NEAR MINEOLA, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 2012 | 374 | 204 | 1110 | 70 | 380 | 38 | 204 | 79 |
| NOV. | 1979 | 2415 | 774 | 418 | 2730 | 160 | 1020 | 59 | 388 | 100 |
| DEC. | 1979 | 10767 | 390 | 212 | 6150 | 75 | 2170 | 38 | 1120 | 80 |
| JAN. | 1980 | 34358 | 273 | 148 | 13800 | 52 | 4840 | 32 | 2970 | 73 |
| FEB. | 1980 | 35097 | 284 | 155 | 14700 | 52 | 4940 | 33 | 3090 | 74 |
| MAR. | 1980 | 14512 | 485 | 263 | 10300 | 93 | 3630 | 44 | 1710 | 86 |
| APR. | 1980 | 29346 | 314 | 171 | 13600 | 58 | 4620 | 34 | 2710 | 76 |
| MAY | 1980 | 29450 | 219 | 120 | 9510 | 40 | 3180 | 29 | 2310 | 70 |
| JUNE | 1980 | 1717.4 | 495 | 264 | 1220 | 110 | 509 | 44 | 205 | 86 |
| JULY | 1980 | 313.04 | 1550 | 812 | 687 | 400 | 341 | 100 | 86 | 150 |
| AUG. | 1980 | 455.9 | 605 | 328 | 403 | 120 | 146 | 50 | 62 | 93 |
| SEPT | 1980 | 610.6 | 2350 | 1170 | 1930 | 810 | 1340 | 150 | 241 | 200 |
| TOTAL | | 161053.94 | ** | ** | 76000 | ** | 27100 | ** | 15100 | ** |
| WTD. AVG. | | 440 | 322 | 175 | ** | 62 | ** | 35 | ** | 76 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 416 | 480 | 544 | 1010 | 315 | 400 | 435 | 356 | 309 | 1780 | 791 | 2500 |
| 2 | 396 | 650 | 582 | 1040 | 308 | 411 | 430 | 375 | 336 | 1660 | 893 | 10600 |
| 3 | 370 | 700 | 750 | 730 | 291 | 337 | 425 | 426 | 324 | 1570 | 828 | 8060 |
| 4 | 350 | 750 | 568 | 770 | 305 | 288 | 501 | 500 | 322 | 1540 | 632 | 6390 |
| 5 | 340 | 768 | 578 | 1000 | 331 | 418 | 669 | 422 | 342 | 1550 | 550 | 5560 |
| 6 | 328 | 602 | 604 | 1160 | 343 | 451 | 623 | 400 | 335 | 1540 | 488 | 4780 |
| 7 | 340 | 584 | 590 | 930 | 339 | 453 | 522 | 375 | 333 | 1530 | 444 | 4170 |
| 8 | 352 | 580 | 650 | 884 | 287 | 334 | 528 | 416 | 343 | 1540 | 384 | 3350 |
| 9 | 340 | 634 | 656 | 964 | 414 | 421 | 579 | 456 | 364 | 1550 | 365 | 2360 |
| 10 | 336 | 644 | 780 | 1170 | 377 | 479 | 692 | 392 | 386 | 1560 | 364 | 1670 |
| 11 | 306 | 770 | 1000 | 656 | 265 | 503 | 621 | 376 | 423 | 1560 | 368 | 1660 |
| 12 | 294 | 900 | 1330 | 776 | 210 | 587 | 600 | 378 | 319 | 1570 | 436 | 1640 |
| 13 | 350 | 832 | 1210 | 854 | 216 | 575 | 418 | 364 | 345 | 1590 | 736 | 1280 |
| 14 | 296 | 974 | 622 | 880 | 217 | 750 | 378 | 462 | 353 | 1630 | 602 | 1210 |
| 15 | 300 | 1080 | 980 | 1000 | 224 | 926 | 310 | 225 | 393 | 1680 | 500 | 2590 |
| 16 | 312 | 1160 | 858 | 738 | 244 | 565 | 226 | 386 | 422 | 1710 | 474 | 8080 |
| 17 | 300 | 744 | 694 | 630 | 258 | 401 | 195 | 325 | 448 | 1720 | 436 | 10900 |
| 18 | 296 | 740 | 600 | 884 | 270 | 570 | 204 | 173 | 466 | 1740 | 453 | 7730 |
| 19 | 292 | 642 | 554 | 1330 | 278 | 508 | 270 | 125 | 484 | 1750 | 990 | 5640 |
| 20 | 294 | 560 | 520 | 1760 | 321 | 364 | 330 | 114 | 483 | 1760 | 919 | 3000 |
| 21 | 298 | 542 | 510 | 1290 | 358 | 371 | 400 | 147 | 411 | 3270 | 724 | 2810 |
| 22 | 302 | 528 | 440 | 314 | 355 | 444 | 399 | 196 | 573 | 5050 | 704 | 2110 |
| 23 | 308 | 546 | 500 | 232 | 359 | 507 | 400 | 219 | 531 | 1700 | 620 | 1770 |
| 24 | 332 | 700 | 468 | 274 | 331 | 381 | 524 | 236 | 775 | 1100 | 528 | 1440 |
| 25 | 394 | 758 | 342 | 173 | 323 | 471 | 482 | 250 | 1150 | 972 | 478 | 1550 |
| 26 | 546 | 1250 | 202 | 123 | 319 | 632 | 350 | 272 | 5660 | 885 | 539 | 2620 |
| 27 | 565 | 1340 | 182 | 140 | 283 | 389 | 338 | 328 | 2380 | 1080 | 750 | 2800 |
| 28 | 584 | 942 | 236 | 187 | 292 | 374 | 385 | 324 | 2600 | 721 | 1020 | 2270 |
| 29 | 556 | 694 | 330 | 252 | 350 | 823 | 371 | 312 | 2940 | 604 | 867 | 1580 |
| 30 | 520 | 624 | 406 | 216 | --- | 539 | 372 | 335 | 2250 | 557 | 392 | 750 |
| 31 | 370 | --- | 674 | 322 | --- | 479 | --- | 304 | --- | 532 | 422 | --- |
| MEAN | 367 | 757 | 612 | 732 | 303 | 489 | 433 | 322 | 893 | 1580 | 610 | 3760 |

## 08018500 SABINE RIVER NEAR MINEOLA, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22.0 | 16.0 | 7.0 | 12.0 | 6.0 | 9.0 | 16.0 | 17.0 | 25.0 | 29.0 | 29.0 | 28.0 |
| 2 | 22.0 | 15.0 | 7.0 | 10.0 | --- | 9.0 | --- | 19.0 | 25.0 | 29.0 | 29.0 | 27.0 |
| 3 | 21.0 | 15.0 | 7.0 | 10.0 | 5.0 | 8.0 | 17.0 | 20.0 | 25.0 | 29.0 | 29.0 | 27.0 |
| 4 | 21.0 | 15.0 | 7.0 | 9.0 | 7.0 | 9.0 | 17.0 | 20.0 | 25.0 | 29.0 | 28.0 | 27.0 |
| 5 | 19.0 | 15.0 | 8.0 | 8.0 | 8.0 | 10.0 | 18.0 | 20.0 | 26.0 | 30.0 | 28.0 | 27.0 |
| 6 | 19.0 | 15.0 | 10.0 | 8.0 | 8.0 | 9.0 | 17.0 | 20.0 | 26.0 | 28.0 | 29.0 | 26.0 |
| 7 | 20.0 | 14.0 | 10.0 | 8.0 | 8.0 | 13.0 | 18.0 | 21.0 | 27.0 | 30.0 | 29.0 | 27.0 |
| 8 | 20.0 | 14.0 | 10.0 | 8.0 | 7.0 | 13.0 | 13.0 | 22.0 | 27.0 | 30.0 | 29.0 | 27.0 |
| 9 | 21.0 | 17.0 | 10.0 | 8.0 | 6.0 | 12.0 | 14.0 | 20.0 | 25.0 | 30.0 | 28.0 | 26.0 |
| 10 | 20.0 | 15.0 | 9.0 | 10.0 | 4.0 | 13.0 | 18.0 | 20.0 | 24.0 | 30.0 | 29.0 | 26.0 |
| 11 | 20.0 | 14.0 | 12.0 | 11.0 | 5.0 | 15.0 | 18.0 | 22.0 | 25.0 | 30.0 | 28.0 | 27.0 |
| 12 | 22.0 | 12.0 | 11.0 | 9.0 | 7.0 | 15.0 | --- | 22.0 | 26.0 | 30.0 | 27.0 | 25.0 |
| 13 | 20.0 | 11.0 | 11.0 | 9.0 | 8.0 | 15.0 | 14.0 | 22.0 | 25.0 | 29.0 | 29.0 | 26.0 |
| 14 | 19.0 | 10.0 | 10.0 | 8.0 | 9.0 | 15.0 | 10.0 | 22.0 | 25.0 | 29.0 | 29.0 | 25.0 |
| 15 | 21.0 | 10.0 | 8.0 | 10.0 | 10.0 | 15.0 | 11.0 | 21.0 | 25.0 | 28.0 | 29.0 | 27.0 |
| 16 | 21.0 | 10.0 | 7.0 | 11.0 | 9.0 | 16.0 | 12.0 | 21.0 | 27.0 | 30.0 | 28.0 | 27.0 |
| 17 | 21.0 | 13.0 | 7.0 | 11.0 | 5.0 | 16.0 | 15.0 | 20.0 | 27.0 | 30.0 | 28.0 | 26.0 |
| 18 | 22.0 | 13.0 | 8.0 | 10.0 | 8.0 | 14.0 | 15.0 | 21.0 | 27.0 | 30.0 | 29.0 | 27.0 |
| 19 | 22.0 | 20.0 | 10.0 | 12.0 | 8.0 | 14.0 | 17.0 | 22.0 | 28.0 | 29.0 | 28.0 | 25.0 |
| 20 | 22.0 | 17.0 | 12.0 | 12.0 | 9.0 | 15.0 | 18.0 | 22.0 | 27.0 | 28.0 | 29.0 | 27.0 |
| 21 | 23.0 | 20.0 | 11.0 | 12.0 | 11.0 | 14.0 | 19.0 | 22.0 | 25.0 | 29.0 | 28.0 | 26.0 |
| 22 | 22.0 | 14.0 | 12.0 | 12.0 | 11.0 | 14.0 | 18.0 | 22.0 | 26.0 | 28.0 | 28.0 | 27.0 |
| 23 | 19.0 | 11.0 | 13.0 | 10.0 | 12.0 | 16.0 | 20.0 | 22.0 | 26.0 | 29.0 | 28.0 | 26.0 |
| 24 | 18.0 | 11.0 | 12.0 | 10.0 | 12.0 | 14.0 | 21.0 | 22.0 | 28.0 | --- | 27.0 | 27.0 |
| 25 | 18.0 | 12.0 | 12.0 | 11.0 | 10.0 | 15.0 | 20.0 | 23.0 | 28.0 | 29.0 | 27.0 | 27.0 |
| 26 | 17.0 | 12.0 | 12.0 | 10.0 | 8.0 | 15.0 | 18.0 | 23.0 | 28.0 | 29.0 | 29.0 | 25.0 |
| 27 | 18.0 | 13.0 | 11.0 | 9.0 | 10.0 | 13.0 | 17.0 | 24.0 | 29.0 | 29.0 | 27.0 | 22.0 |
| 28 | 19.0 | 12.0 | 12.0 | 10.0 | 10.0 | 13.0 | 16.0 | 24.0 | 29.0 | 28.0 | 28.0 | 20.0 |
| 29 | 20.0 | 11.0 | 11.0 | --- | 12.0 | 15.0 | 17.0 | 25.0 | 29.0 | 29.0 | 27.0 | 20.0 |
| 30 | 20.0 | 9.0 | 11.0 | --- | --- | 16.0 | 19.0 | 25.0 | 29.0 | 29.0 | 27.0 | 20.0 |
| 31 | 18.0 | --- | 10.0 | 6.0 | --- | 15.0 | --- | 25.0 | --- | 29.0 | 26.0 | --- |
| MEAN | 20.0 | 13.5 | 10.0 | 10.0 | 8.5 | 13.5 | 16.5 | 21.5 | 26.5 | 29.0 | 28.0 | 25.5 |

## 08018730 BURKE CREEK NEAR YANTIS, TX

LOCATION.--Lat 32°59'26", long 95°37'18", Hopkins County, Hydrologic Unit 12010003, on the downstream side of highway embankment, 7 ft (2.1 m) to left of left end of main bridge on Farm Road 1567, 100 ft (30 m) upstream from Cane Branch, 1.2 mi (1.9 km) upstream from Brushy Branch, and 5.0 mi (8.0 km) northwest of Yantis.

DRAINAGE AREA.--33.1 mi² (85.7 km²).

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 400.00 ft (121.920 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. There are no known diversions or return effluents in the basin above gage. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,750 ft³/s (77.9 m³/s) Mar. 30, 1979, gage height, 10.74 ft (3.274 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1943, 17.5 ft (5.334 m) June 6, 1943, from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

| Date | Time | Discharge | | Gage height | | Date | Time | Discharge | | Gage height | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (ft³/s) | (m³/s) | (ft) | (m) | | | (ft³/s) | (m³/s) | (ft) | (m) |
| Jan. 22 | 1700 | 1,560 | 44.2 | 9.98 | 3.042 | May 2 | 0515 | 1,080 | 30.6 | 9.53 | 2.905 |
| Apr. 13 | 2345 | 1,440 | 40.8 | 9.88 | 3.011 | May 16 | 0530 | *2,470 | 70.0 | 10.59 | 3.228 |

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .01 | 5.0 | 1.6 | 9.2 | 18 | 6.9 | 18 | 26 | 2.5 | .21 | .00 | .00 |
| 2 | .00 | 2.5 | 1.8 | 9.0 | 16 | 6.9 | 15 | 605 | 2.2 | .17 | .00 | .00 |
| 3 | .00 | 1.6 | 2.0 | 10 | 14 | 6.8 | 13 | 88 | 1.7 | .10 | .00 | .00 |
| 4 | .00 | 1.2 | 2.1 | 9.5 | 13 | 6.8 | 10 | 20 | 1.4 | .07 | .00 | .00 |
| 5 | .00 | 1.2 | 2.4 | 8.4 | 13 | 6.7 | 8.2 | 12 | 1.2 | .10 | .00 | .00 |
| 6 | .00 | 1.0 | 2.7 | 8.4 | 12 | 6.7 | 7.9 | 10 | 1.0 | .09 | .00 | .00 |
| 7 | .00 | 1.1 | 2.7 | 8.4 | 11 | 6.7 | 13 | 8.7 | .81 | .08 | .00 | .00 |
| 8 | .00 | 1.0 | 2.4 | 7.6 | 177 | 6.7 | 36 | 8.9 | .75 | .01 | .00 | .00 |
| 9 | .00 | 40 | 2.1 | 7.4 | 500 | 6.6 | 10 | 12 | .74 | .00 | .00 | .00 |
| 10 | .00 | 15 | 2.2 | 8.0 | 162 | 6.6 | 8.1 | 8.1 | .77 | .00 | .00 | .00 |
| 11 | .00 | 4.5 | 2.6 | 11 | 92 | 6.6 | 7.7 | 6.8 | .71 | .00 | .00 | .00 |
| 12 | .00 | 2.9 | 52 | 9.0 | 46 | 33 | 11 | 112 | .53 | .00 | .00 | .00 |
| 13 | .00 | 2.1 | 259 | 8.0 | 28 | 18 | 582 | 100 | .37 | .00 | .00 | .00 |
| 14 | .00 | 2.0 | 34 | 8.2 | 22 | 9.4 | 761 | 15 | .53 | .00 | .00 | .00 |
| 15 | .00 | 1.8 | 11 | 8.4 | 53 | 8.1 | 107 | 181 | .48 | .00 | .00 | .00 |
| 16 | .05 | 1.6 | 8.2 | 14 | 16 | 9.9 | 37 | 1440 | .42 | .00 | .00 | .00 |
| 17 | 5.6 | 1.5 | 6.6 | 13 | 12 | 14 | 18 | 186 | .48 | .00 | .00 | .00 |
| 18 | 8.1 | 1.5 | 6.1 | 10 | 12 | 8.7 | 13 | 41 | .37 | .00 | .00 | .00 |
| 19 | 2.9 | 2.0 | 6.4 | 9.0 | 12 | 7.9 | 11 | 15 | .33 | .00 | .00 | .00 |
| 20 | 1.4 | 2.1 | 6.4 | 292 | 12 | 9.5 | 10 | 11 | 2.3 | .00 | .00 | .00 |
| 21 | .80 | 9.4 | 8.1 | 323 | 11 | 8.4 | 9.0 | 8.6 | 8.2 | .00 | .00 | .00 |
| 22 | 1.3 | 15 | 571 | 991 | 9.7 | 7.1 | 8.1 | 8.0 | 55 | 4.7 | .00 | .00 |
| 23 | 1.8 | 4.8 | 273 | 295 | 8.4 | 8.2 | 7.6 | 8.0 | 155 | 2.4 | .00 | .00 |
| 24 | 1.1 | 3.2 | 517 | 52 | 7.8 | 12 | 7.5 | 7.1 | 16 | .47 | .00 | .00 |
| 25 | 1.0 | 2.9 | 62 | 29 | 7.6 | 8.4 | 29 | 6.4 | 3.9 | .27 | .00 | .00 |
| 26 | .73 | 2.7 | 25 | 20 | 7.4 | 7.7 | 200 | 5.9 | 1.8 | .17 | .00 | .00 |
| 27 | .53 | 2.4 | 17 | 15 | 7.2 | 18 | 44 | 4.8 | .95 | .10 | .00 | .50 |
| 28 | .53 | 2.1 | 13 | 14 | 7.2 | 125 | 13 | 4.1 | .58 | .06 | .00 | 5.0 |
| 29 | .53 | 1.8 | 12 | 95 | 7.1 | 118 | 10 | 3.8 | .35 | .04 | .00 | 15 |
| 30 | 8.2 | 1.6 | 11 | 90 | --- | 99 | 8.5 | 3.5 | .25 | .02 | .00 | 8.0 |
| 31 | 37 | --- | 10 | 51 | --- | 28 | --- | 3.0 | --- | .01 | .00 | --- |
| TOTAL | 71.58 | 137.5 | 1933.4 | 2443.5 | 1314.4 | 632.3 | 2033.6 | 2969.7 | 261.62 | 9.07 | .00 | 28.50 |
| MEAN | 2.31 | 4.58 | 62.4 | 78.8 | 45.3 | 20.4 | 67.8 | 95.8 | 8.72 | .29 | .000 | .95 |
| MAX | 37 | 40 | 571 | 991 | 500 | 125 | 761 | 1440 | 155 | 4.7 | .00 | 15 |
| MIN | .00 | 1.0 | 1.6 | 7.4 | 7.1 | 6.6 | 7.5 | 3.0 | .25 | .00 | .00 | .00 |
| CFSM | .07 | .14 | 1.89 | 2.38 | 1.37 | .62 | 2.05 | 2.89 | .26 | .009 | .000 | .03 |
| IN. | .08 | .15 | 2.17 | 2.75 | 1.48 | .71 | 2.29 | 3.34 | .29 | .01 | .00 | .03 |
| AC-FT | 142 | 273 | 3830 | 4850 | 2610 | 1250 | 4030 | 5890 | 519 | 18 | .00 | 57 |

CAL YR 1979 TOTAL 10231.33 MEAN 28.0 MAX 1190 MIN .00 CFSM .85 IN 11.50 AC-FT 20290
WTR YR 1980 TOTAL 11835.17 MEAN 32.3 MAX 1440 MIN .00 CFSM .98 IN 13.30 AC-FT 23480

## 08018800 LAKE FORK RESERVOIR NEAR QUITMAN, TX

LOCATION.--Lat 32°48'40", long 94°31'38", Wood County, Hydrologic Unit 12010003, in room at left end of gated concrete spillway structure of Lake Fork Dam on Lake Fork Creek, 0.2 mi (0.3 km) upstream from bridge on State Highway 182, 0.8 mi (1.3 km) downstream from Caney Creek, 2.1 mi (3.4 km) upstream from Alum Branch, and 4.4 mi (7.1 km) west-northwest of the County Courthouse in Quitman.

DRAINAGE AREA.--490 mi² (1,269 km²).

PERIOD OF RECORD.--October 1979 to September 1980.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam 12,660 ft (3,859 m) long, including a 260-foot (79 m) gated concrete spillway. The outlet works consist of two 5- by 8-foot (1.5 by 2.4 m) low-flow sluice gates, five 40- by 20-foot (12 by 6 m) taintor gates, and two 5- by 6-foot (1.5 by 1.8 m) sluice gates that open into a set-well where there are two 36-inch (914 mm) and one 10-inch (254 mm) valve-controlled and metered-outlet pipes. Deliberate impoundment began June 29, 1979, and closure of the dam was completed in January 1980. The lake was built for water conservation and is owned by the Sabine River Authority. No known diversions were made from the lake this year. Flow is affected at times by discharge from the flood-detention pools of 21 floodwater-retarding structures with a combined detention capacity of 20,270 acre-ft (25.0 hm³). These structures control runoff from 60.0 mi² (155.4 km²) above the lake. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 419.5 | 1,270,000 |
| Top of tainter gates | 405.0 | 732,900 |
| Crest of gated spillway | 385.0 | 291,900 |
| Invert of upper sluice gate | 383.0 | 260,400 |
| Invert of lower sluice gate | 360.5 | 43,120 |
| Invert of sluice gate in two center pieces | 360.0 | 40,620 |

COOPERATION.--Area and capcity tables were prepared and furnished by URS/Forrest and Cotton, Inc., Consulting Engineers, for the Sabine River Authority. Observed elevations for the period Oct. 31, 1979, to Jan. 31, 1980, were furnished by the Sabine River Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 126,400 acre-ft (156 hm³) Apr. 16, 1980, elevation, 372.29 ft (113.474 m); minimum observed, 46,140 acre-ft (56.9 hm³) Dec. 11-14, 1979, elevation, 361.10 ft (110.063 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 126,400 acre-ft (156 hm³) Apr. 16 at 0700 hours, elevation, 372.29 ft (113.474 m); minimum observed, 46,140 acre-ft (56.9 hm³) Dec. 11-14, elevation, 361.10 ft (110.063 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 361.0 | 45,610 | 369.0 | 97,870 |
| 363.0 | 56,580 | 371.0 | 114,700 |
| 365.0 | 68,930 | 373.0 | 133,300 |
| 367.0 | 82,670 | | |

### CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 48500 | 47740 | 47740 | 79500 | 106600 | 107100 | 108000 | 103300 | 94830 | 91100 | 87190 | 83710 |
| 2 | 48450 | 47740 | 47740 | 78940 | 106000 | 107000 | 108100 | 104700 | 93430 | 91020 | 87050 | 83560 |
| 3 | 48400 | 47740 | 47310 | 78800 | 105100 | 106900 | 108500 | 106900 | 93660 | 90860 | 86820 | 83490 |
| 4 | 48350 | 47740 | 46990 | 78090 | 105800 | 106800 | 108400 | 106900 | 93820 | 90710 | 86680 | 83340 |
| 5 | 48300 | 47630 | 46940 | 77600 | 105000 | 106700 | 108400 | 105200 | 93590 | 90550 | 86530 | 83190 |
| 6 | 48250 | 47530 | 47210 | 77250 | 104800 | 106700 | 108500 | 103400 | 93510 | 90400 | 86450 | 83040 |
| 7 | 48200 | 47470 | 46940 | 77030 | 105200 | 106900 | 108500 | 101700 | 93430 | 90160 | 86300 | 82970 |
| 8 | 48150 | 47470 | 46940 | 75550 | 106900 | 106900 | 108400 | 100100 | 93350 | 90010 | 86160 | 82970 |
| 9 | 48100 | 48430 | 46940 | 74550 | 112200 | 106900 | 108500 | 98520 | 93270 | 89860 | 86010 | 82820 |
| 10 | 48050 | 48800 | 46460 | 73350 | 118000 | 107000 | 108400 | 97010 | 93200 | 89710 | 85930 | 82750 |
| 11 | 48000 | 48800 | 46140 | 72550 | 119400 | 107100 | 108900 | 95380 | 93120 | 89490 | 85860 | 82530 |
| 12 | 47950 | 48800 | 46140 | 71610 | 118700 | 107100 | 109200 | 96390 | 92890 | 89340 | 85710 | 82530 |
| 13 | 47900 | 48530 | 48850 | 71610 | 117400 | 106300 | 113400 | 95450 | 92810 | 89190 | 85560 | 82320 |
| 14 | 47800 | 48800 | 47580 | 71610 | 115700 | 106100 | 121400 | 95140 | 92650 | 88970 | 85420 | 82250 |
| 15 | 47850 | 48800 | 47740 | 71610 | 114200 | 106100 | 126100 | 96850 | 92420 | 88820 | 85340 | 82180 |
| 16 | 47850 | 48800 | 47740 | 71610 | 112200 | 107100 | 125900 | 96930 | 92420 | 88680 | 85120 | 82040 |
| 17 | 47850 | 48800 | 49010 | 71610 | 110100 | 105900 | 124100 | 117200 | 92260 | 88530 | 85050 | 81900 |
| 18 | 47800 | 48800 | 47470 | 71610 | 108600 | 105800 | 121700 | 119900 | 92180 | 88310 | 84900 | 82110 |
| 19 | 47750 | 48800 | 51150 | 71610 | 108500 | 105900 | 119400 | 119500 | 92650 | 88230 | 84750 | 81970 |
| 20 | 47700 | 48530 | 50920 | 71610 | 108700 | 106100 | 117200 | 117600 | 92730 | 88080 | 84600 | 81760 |
| 21 | 47700 | 48270 | 51550 | 76050 | 108900 | 106000 | 115100 | 115700 | 92340 | 88310 | 84530 | 81690 |
| 22 | 47900 | 48270 | 55220 | 91250 | 109000 | 105900 | 113200 | 113500 | 92340 | 88080 | 84300 | 81620 |
| 23 | 47800 | 48270 | 60180 | 96700 | 109200 | 106500 | 111200 | 111500 | 92260 | 88010 | 84230 | 81550 |
| 24 | 47700 | 48270 | 65310 | 111200 | 109300 | 106100 | 109900 | 109400 | 92030 | 87860 | 84010 | 81830 |
| 25 | 47650 | 48270 | 70940 | 111900 | 108500 | 106100 | 110100 | 107300 | 91950 | 87640 | 83860 | 81760 |
| 26 | 47600 | 48270 | 80560 | 111600 | 107700 | 106100 | 109600 | 105200 | 91870 | 87490 | 83790 | 81620 |
| 27 | 47600 | 47740 | 82040 | 109800 | 107500 | 105600 | 109800 | 103300 | 91640 | 87940 | 84160 | 81550 |
| 28 | 47600 | 47740 | 81690 | 108700 | 107100 | 106100 | 108500 | 101200 | 91560 | 87790 | 84010 | 81830 |
| 29 | 47550 | 47740 | 81690 | 108100 | 107200 | 107200 | 106600 | 99420 | 91330 | 87640 | 84080 | 83560 |
| 30 | 47700 | 47740 | 81410 | 107800 | --- | 107200 | 104700 | 97790 | 91170 | 87490 | 83860 | 83560 |
| 31 | 47740 | --- | 80840 | 107300 | --- | 107700 | --- | 96310 | --- | 87340 | 83790 | --- |
| MAX | 48500 | 48800 | 82040 | 111900 | 119400 | 107700 | 126100 | 119900 | 94830 | 91100 | 87190 | 83710 |
| MIN | 47550 | 47470 | 46140 | 71610 | 104800 | 105600 | 104700 | 95140 | 91170 | 87340 | 83790 | 81550 |
| (†) | 361.40 | 361.40 | 366.74 | 370.14 | 370.13 | 370.19 | 369.83 | 368.70 | 368.14 | 367.63 | 367.15 | 367.12 |
| (‡) | -760 | 0 | +33100 | +26460 | -100 | +500 | -3000 | -8390 | -5140 | -3830 | -3550 | -230 |

CAL YR 1979 MAX - MIN - ‡ -
WTR YR 1980 MAX 126100 MIN 46140 ‡ +35060

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

## 08019000 LAKE FORK CREEK NEAR QUITMAN, TX

LOCATION.--Lat 32°45'47", long 95°27'46", Wood County, Hydrologic Unit 12010003, at downstream side of highway embankment near left end of bridge on State Highway 37, 0.3 mi (0.5 km) downstream from Dry Creek, 2.4 mi (3.9 km) south of Quitman, and 23.4 mi (37.7 km) upstream upstream from mouth.

DRAINAGE AREA.--585 mi$^2$ (1,515 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1924 to April 1926, February 1939 to current year. Discharge for some high-water periods in 1925-26 published in WSP 1342. Monthly discharge only for some periods, published in WSP 1312. Prior to October 1961, published as Lake Fork Sabine River near Quitman.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 317.42 ft (96.750 m) National Geodetic Vertical Datum of 1929. June 27, 1924, to Apr. 30, 1926, nonrecording gage at site 1,000 ft (305 m) downstream at same datum. Prior to Sept. 5, 1978, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records good. Since May 1962, flow from 31.0 mi$^2$ (80.3 km$^2$) controlled by Lake Quitman, capacity 7,440 acre-ft (9.17 hm$^3$), on Dry Creek, a tributary above this station and below Lake Fork Reservoir. Construction of Lake Fork Dam and Reservoir, capacity 675,800 acre-ft (883 hm$^3$), located about 5 mi (8 km) upstream from station, was begun in 1975. Deliberate impoundment began June 29, 1979, and the dam was completed in January 1980. Lake Fork Reservoir controls runoff from 490 mi$^2$ (1,269 km$^2$). Records furnished by the city of Quitmen indicate that during the current year 197 acre-ft (243,000 m$^3$) of sewage effluent was returned to a tributary above this station.

AVERAGE DISCHARGE.--41 years (water years 1925, 1940-79) prior to regulation by Lake Fork Reservoir, 432 ft$^3$/s (12.23 m$^3$/s), 10.03 in/yr (255 mm/yr), 313,000 acre-ft/yr (386 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,600 ft$^3$/s (2,140 m$^3$/s) Mar. 30, 1945, gage height, 29.85 ft (9.098 m), from floodmark, from rating curve extended above 49,000 ft$^3$/s (1,390 m$^3$/s); no flow at times most years.

Maximum stage since at least 1890, that of Mar. 30, 1945.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1895 reached a stage of about 25.9 ft (7.89 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,710 ft$^3$/s (76.7 m$^3$/s) Jan. 23 at 0200 hours, gage height, 15.15 ft (4.618 m); no flow Aug. 23-29 and Sept. 13-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | UCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 81 | 212 | 87 | 567 | 1300 | 51 | 248 | 1310 | 910 | .4.4 | .46 | .21 |
| 2 | 70 | 119 | 83 | 548 | 1130 | 52 | 112 | 1500 | 854 | 3.4 | .41 | .10 |
| 3 | 64 | 85 | 81 | 539 | 1120 | 40 | 87 | 2060 | 800 | 3.3 | .30 | .07 |
| 4 | 60 | 73 | 82 | 525 | 1090 | 38 | 76 | 1790 | 267 | 2.5 | .28 | .06 |
| 5 | 55 | 66 | 82 | 511 | 351 | 40 | 64 | 1600 | 31 | 1.9 | .27 | .06 |
| 6 | 50 | 61 | 82 | 496 | 89 | 41 | 57 | 1450 | 18 | 1.6 | .23 | .08 |
| 7 | 47 | 58 | 82 | 486 | 66 | 38 | 54 | 1320 | 13 | 1.3 | .17 | .06 |
| 8 | 45 | 55 | 78 | 465 | 204 | 37 | 49 | 1260 | 13 | 1.2 | .13 | .03 |
| 9 | 43 | 130 | 75 | 451 | 1040 | 37 | 46 | 1210 | 11 | 1.0 | .14 | .04 |
| 10 | 42 | 325 | 73 | 442 | 1760 | 35 | 40 | 1160 | 9.1 | 2.5 | .14 | .06 |
| 11 | 40 | 333 | 71 | 433 | 1830 | 34 | 36 | 1110 | 7.7 | 2.2 | .09 | .05 |
| 12 | 39 | 196 | 74 | 428 | 1700 | 126 | 38 | 1040 | 6.4 | 1.9 | .06 | .01 |
| 13 | 37 | 150 | 138 | 412 | 1610 | 527 | 327 | 492 | 5.7 | 2.1 | .08 | .00 |
| 14 | 36 | 135 | 165 | 399 | 1520 | 544 | 1310 | 746 | 5.1 | 1.8 | .06 | .00 |
| 15 | 35 | 126 | 143 | 390 | 1460 | 190 | 1600 | 1010 | 4.5 | 1.4 | .08 | .00 |
| 16 | 39 | 117 | 156 | 390 | 1400 | 197 | 1680 | 1820 | 4.1 | 1.1 | .08 | .00 |
| 17 | 46 | 112 | 166 | 195 | 1360 | 1110 | 1680 | 2070 | 2.9 | .93 | .07 | .00 |
| 18 | 67 | 107 | 160 | 76 | 1320 | 1180 | 1610 | 1840 | 2.8 | .84 | .07 | .00 |
| 19 | 53 | 107 | 157 | 58 | 1220 | 541 | 1550 | 1750 | 6.2 | .83 | .05 | .00 |
| 20 | 47 | 109 | 154 | 86 | 746 | 167 | 1500 | 1670 | 24 | .75 | .03 | .00 |
| 21 | 46 | 124 | 152 | 185 | 173 | 106 | 1420 | 1590 | 275 | .53 | .02 | .00 |
| 22 | 48 | 198 | 239 | 1240 | 88 | 78 | 1280 | 1490 | 258 | .58 | .01 | .00 |
| 23 | 51 | 157 | 390 | 2340 | 72 | 67 | 1210 | 1420 | 319 | .78 | .00 | .00 |
| 24 | 47 | 127 | 585 | 1840 | 64 | 64 | 1170 | 1370 | 223 | .75 | .00 | .00 |
| 25 | 44 | 117 | 714 | 1650 | 81 | 57 | 1440 | 1320 | 158 | .62 | .00 | .00 |
| 26 | 41 | 110 | 737 | 1560 | 404 | 47 | 2230 | 1270 | 50 | .56 | .00 | .00 |
| 27 | 40 | 105 | 726 | 1090 | 492 | 52 | 1860 | 1230 | 14 | .60 | .00 | .07 |
| 28 | 39 | 102 | 673 | 456 | 181 | 612 | 1620 | 1190 | 9.2 | .94 | .00 | .50 |
| 29 | 37 | 99 | 654 | 396 | 61 | 623 | 1480 | 1150 | 8.9 | 1.0 | .00 | 6.2 |
| 30 | 45 | 94 | 633 | 533 | --- | 610 | 1370 | 1110 | 7.1 | .97 | .31 | 42 |
| 31 | 168 | --- | 593 | 1360 | --- | 617 | --- | 1020 | --- | .63 | .58 | --- |
| TOTAL | 1602 | 3909 | 8285 | 20547 | 23932 | 7958 | 27244 | 42368 | 4317.7 | 44.91 | 4.14 | 49.60 |
| MEAN | 51.7 | 130 | 267 | 663 | 825 | 257 | 908 | 1367 | 144 | 1.45 | .13 | 1.65 |
| MAX | 168 | 333 | 737 | 2340 | 1830 | 1180 | 2230 | 2070 | 910 | 4.4 | .58 | 42 |
| MIN | 35 | 55 | 71 | 58 | 61 | 34 | 36 | 492 | 2.8 | .53 | .00 | .00 |
| CFSM | .09 | .22 | .46 | 1.13 | 1.41 | .44 | 1.55 | 2.34 | .25 | .002 | .000 | .003 |
| IN. | .10 | .25 | .53 | 1.31 | 1.52 | .51 | 1.73 | 2.69 | .27 | .00 | .00 | .00 |
| AC-FT | 3180 | 7750 | 16430 | 40750 | 47470 | 15780 | 54040 | 84040 | 8560 | 89 | 8.2 | 98 |

CAL YR 1979 TOTAL 165753.91 MEAN 454 MAX 6250 MIN .43 CFSM .78 IN 10.54 AC-FT 328800
WTR YR 1980 TOTAL 140261.35 MEAN 383 MAX 2340 MIN .00 CFSM .66 IN 8.92 AC-FT 278200

## 08019000 LAKE FORK CREEK NEAR QUITMAN, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1961 to June 1965, November 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1967 to current year.
WATER TEMPERATURES: December 1967 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,800 micromhos Oct. 5, 1972; minimum daily, 37 micromhos Dec. 11, 1971.
WATER TEMPERATURES (1976-1979): Maximum daily, 29.0°C July 3, 4, 6, 1969, July 29, 1972, July 1, 1977; minimum daily, 2.0°C Jan. 10, 1970.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 805 micromhos Mar. 11; minimum daily, 160 micromhos Apr. 26.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|---|
| NOV 07... | 0800 | 60 | 246 | -- | 16.0 | 56 | 17 | 14 | 5.1 | 22 |
| DEC 23... | 0800 | 350 | 414 | -- | 9.0 | 70 | 55 | 17 | 6.6 | 45 |
| JAN 20... | 0800 | 81 | 772 | -- | 9.0 | 140 | 140 | 32 | 15 | 89 |
| FEB 05... | 1230 | 278 | 339 | -- | 7.0 | 68 | 48 | 16 | 6.7 | 33 |
| APR 30... | 0800 | 1350 | 235 | -- | 17.0 | 61 | 32 | 15 | 5.8 | 20 |
| MAY 21... | 1730 | 1510 | 210 | -- | 22.0 | 53 | 22 | 13 | 5.0 | 16 |
| JUN 30... | 0800 | 14 | 380 | 7.8 | 21.0 | 73 | 27 | 20 | 5.7 | 37 |
| AUG 31... | 0800 | .60 | 469 | -- | 20.0 | 78 | 7 | 19 | 7.3 | 54 |
| SEP 30... | 0800 | 50 | 361 | -- | 23.0 | 74 | 25 | 18 | 7.0 | 60 |

| DATE | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| NOV 07... | 1.3 | 6.0 | 48 | 0 | 22 | 39 | .1 | 8.8 | 141 |
| DEC 23... | 2.3 | 6.1 | 18 | 0 | 41 | 82 | .1 | 8.0 | 215 |
| JAN 20... | 3.3 | 5.7 | 5 | 0 | 110 | 160 | .2 | 16 | 430 |
| FEB 05... | 1.7 | 5.9 | 24 | 0 | 47 | 56 | .1 | 11 | 188 |
| APR 30... | 1.1 | 5.5 | 36 | 0 | 33 | 34 | .1 | 4.2 | 135 |
| MAY 21... | 1.0 | 5.5 | 38 | 0 | 30 | 21 | .1 | 2.4 | 112 |
| JUN 30... | 1.9 | 5.7 | 56 | 0 | 42 | 62 | .3 | 7.8 | 208 |
| AUG 31... | 2.7 | 9.1 | 86 | 0 | 69 | 46 | .3 | 13 | 260 |
| SEP 30... | 2.0 | 5.2 | 54 | 0 | 41 | 54 | .2 | 7.7 | 189 |

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 1602 | 211 | 117 | 505 | 26 | 114 | 30 | 130 | 50 |
| NOV. | 1979 | 3909 | 318 | 176 | 1860 | 45 | 470 | 44 | 459 | 72 |
| DEC. | 1979 | 8285 | 320 | 177 | 3960 | 46 | 1020 | 44 | 974 | 73 |
| JAN. | 1980 | 20547 | 276 | 153 | 8470 | 38 | 2120 | 38 | 2110 | 63 |
| FEB. | 1980 | 23932 | 266 | 147 | 9490 | 35 | 2290 | 37 | 2390 | 62 |
| MAR. | 1980 | 7958 | 416 | 230 | 4930 | 65 | 1410 | 54 | 1170 | 90 |
| APR. | 1980 | 27244 | 237 | 131 | 9660 | 31 | 2270 | 33 | 2450 | 56 |
| MAY | 1980 | 42368 | 230 | 127 | 14600 | 29 | 3340 | 33 | 3720 | 54 |
| JUNE | 1980 | 4317.7 | 259 | 143 | 1670 | 34 | 401 | 36 | 420 | 60 |
| JULY | 1980 | 44.91 | 480 | 265 | 32 | 78 | 9.4 | 62 | 7.5 | 100 |
| AUG. | 1980 | 4.14 | 423 | 234 | 2.6 | 65 | 0.7 | 56 | 0.6 | 93 |
| SEPT | 1980 | 49.60 | 368 | 203 | 27 | 54 | 7.2 | 49 | 6.6 | 82 |
| TOTAL | | 140261.35 | ** | ** | 55200 | ** | 13400 | ** | 13800 | ** |
| WTD. AVG. | | 383 | 264 | 146 | ** | 36 | ** | 37 | ** | 61 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 185 | 344 | 294 | 242 | 256 | 675 | 368 | 233 | 211 | 420 | 414 | 465 |
| 2 | 183 | 294 | 292 | 230 | 245 | 700 | 432 | 235 | 213 | 472 | 415 | 460 |
| 3 | 174 | 286 | 290 | 235 | 236 | 725 | 472 | 239 | 250 | 502 | 420 | 455 |
| 4 | 173 | 288 | 285 | 250 | 242 | 747 | 503 | 241 | 310 | 498 | 419 | 450 |
| 5 | 171 | 258 | 278 | 260 | 350 | 632 | 534 | 244 | 380 | 510 | 418 | 464 |
| 6 | 172 | 250 | 300 | 245 | 492 | 700 | 565 | 242 | 435 | 530 | 412 | 452 |
| 7 | 174 | 246 | 314 | 243 | 568 | 761 | 582 | 239 | 481 | 549 | 411 | 445 |
| 8 | 172 | 275 | 280 | 240 | 334 | 770 | 600 | 235 | 537 | 545 | 417 | 443 |
| 9 | 175 | 320 | 320 | 228 | 243 | 780 | 607 | 231 | 503 | 540 | 408 | 440 |
| 10 | 169 | 358 | 370 | 230 | 264 | 788 | 595 | 226 | 552 | 500 | 410 | 436 |
| 11 | 174 | 330 | 402 | 232 | 232 | 805 | 587 | 229 | 576 | 505 | 406 | 444 |
| 12 | 179 | 300 | 504 | 244 | 250 | 600 | 518 | 231 | 587 | 515 | 413 | 446 |
| 13 | 171 | 278 | 610 | 239 | 240 | 434 | 400 | 307 | 594 | 480 | 418 | --- |
| 14 | 172 | 270 | 500 | 232 | 228 | 400 | 318 | 298 | 596 | 475 | 420 | --- |
| 15 | 174 | 260 | 402 | 234 | 234 | 387 | 260 | 262 | 606 | 469 | 423 | --- |
| 16 | 173 | 280 | 274 | 278 | 233 | 380 | 239 | 241 | 608 | 470 | 421 | --- |
| 17 | 174 | 300 | 280 | 610 | 237 | 317 | 230 | 235 | 612 | 466 | 418 | --- |
| 18 | 300 | 302 | 265 | 670 | 300 | 315 | 224 | 230 | 632 | 468 | 417 | --- |
| 19 | 280 | 300 | 256 | 720 | 329 | 390 | 220 | 226 | 549 | 470 | 418 | --- |
| 20 | 242 | 298 | 275 | 750 | 328 | 410 | 225 | 230 | 513 | 472 | 412 | --- |
| 21 | 225 | 310 | 290 | 772 | 442 | 450 | 221 | 210 | 336 | 473 | 414 | --- |
| 22 | 206 | 380 | 380 | 500 | 500 | 509 | 230 | 216 | 253 | 472 | 423 | --- |
| 23 | 260 | 432 | 390 | 208 | 583 | 570 | 235 | 214 | 284 | 460 | --- | --- |
| 24 | 245 | 390 | 400 | 246 | 550 | 606 | 245 | 215 | 291 | 455 | --- | --- |
| 25 | 215 | 338 | 414 | 272 | 520 | 670 | 210 | 213 | 246 | 450 | --- | --- |
| 26 | 200 | 330 | 342 | 264 | 274 | 669 | 160 | 212 | 280 | 449 | --- | --- |
| 27 | 195 | 322 | 274 | 248 | 325 | 676 | 200 | 217 | 300 | 440 | --- | 443 |
| 28 | 194 | 310 | 255 | 250 | 400 | 500 | 220 | 213 | 315 | 430 | --- | 415 |
| 29 | 196 | 298 | 242 | 256 | 567 | 489 | 238 | 212 | 340 | 423 | --- | 400 |
| 30 | 242 | 284 | 250 | 302 | --- | 356 | 235 | 210 | 380 | 417 | 420 | 361 |
| 31 | 300 | --- | 256 | 286 | --- | 352 | --- | 214 | --- | 415 | 469 | --- |
| MEAN | 202 | 308 | 332 | 330 | 345 | 567 | 356 | 232 | 426 | 475 | 418 | 439 |

## 08019300 LAKE WINNSBORO NEAR WINNSBORO, TX

LOCATION.--Lat 32°53'10", long 95°20'40", Wood County, Hydrologic Unit 12010002, near left end of dam on Big Sandy Creek, 0.8 mi (1.3 km) upstream from bridge on State Highway 37, 2.5 mi (4.0 km) upstream from Indian Creek, and 5.8 mi (9.3 km) southwest of Winnsboro.

DRAINAGE AREA.--27.1 mi² (70.2 km²).

PERIOD OF RECORD.--June 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Jan. 19, 1963, nonrecording gage at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 2,500 ft (762 m) long. Storage began June 11, 1962, and the dam was completed in August 1962. The dam was built by Wood County for flood control and recreation. The spillway is an uncontrolled 20-foot (6 m) square drop inlet at crest elevation of 419.0 ft (127.71 m). The crest was raised in April 1966 from elevation 417 to 419 ft (127.1 to 127.7 m). The other spillway is a 300-foot-wide (91 m) cut channel through natural ground near right end of dam. The capacity curve is based on 1960 Geological Survey topographic maps. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 437.0 | - |
| Design flood | 433.0 | 22,500 |
| Crest of spillway | 427.0 | 16,270 |
| Crest of drop inlet (top of conservation pool) | 419.0 | 8,110 |
| Lowest gated outlet (invert) | 392.2 | 0 |

COOPERATION.--Capacity curve was furnished by Wisenbaker, Fix, and Associates, Consulting Engineers for Wood County.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 11,640 acre-ft (14.4 hm³) Feb. 5, 1975, elevation, 422.92 ft (128.906 m); minimum since first appreciable storage, 2,430 acre-ft (3.00 hm³) Jan. 19, 20, 1965, elevation, 409.79 ft (124.904 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 9,490 acre-ft (11.7 hm³) May 2 at 1200 hours, elevation, 420.63 ft (128.208 m); minimum, 6,400 acre-ft (7.89 hm³) Sept. 24, elevation, 416.74 ft (127.022 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 415.0 | 5,230 | 419.0 | 8,110 |
| 417.0 | 6,590 | 421.0 | 9,820 |

### CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8130 | 8120 | 8050 | 8160 | 8300 | 8090 | 8350 | 8870 | 8130 | 7830 | 7180 | 6730 |
| 2 | 8090 | 8110 | 8050 | 8160 | 8270 | 8090 | 8320 | 9320 | 8120 | 7760 | 7160 | 6710 |
| 3 | 8070 | 8090 | 8030 | 8160 | 8260 | 8090 | 8280 | 8910 | 8110 | 7750 | 7140 | 6700 |
| 4 | 8030 | 8090 | 8050 | 8150 | 8240 | 8130 | 8240 | 8670 | 8090 | 7730 | 7110 | 6680 |
| 5 | 8040 | 8080 | 8070 | 8150 | 8230 | 8100 | 8220 | 8520 | 8090 | 7710 | 7090 | 6660 |
| 6 | 8040 | 8050 | 8030 | 8170 | 8210 | 8120 | 8200 | 8510 | 8070 | 7690 | 7080 | 6640 |
| 7 | 8040 | 8050 | 8030 | 8140 | 8210 | 8130 | 8220 | 8430 | 8070 | 7670 | 7060 | 6620 |
| 8 | 8040 | 8050 | 8030 | 8130 | 8620 | 8120 | 8170 | 8430 | 8050 | 7640 | 7040 | 6600 |
| 9 | 8030 | 8220 | 8030 | 8130 | 8830 | 8130 | 8140 | 8410 | 8030 | 7630 | 7020 | 6600 |
| 10 | 8030 | 8230 | 8040 | 8140 | 8730 | 8140 | 8130 | 8370 | 8030 | 7600 | 7000 | 6590 |
| 11 | 8030 | 8190 | 8050 | 8120 | 8620 | 8130 | 8130 | 8310 | 8010 | 7580 | 7000 | 6570 |
| 12 | 8030 | 8160 | 8130 | 8110 | 8510 | 8230 | 8170 | 8380 | 8000 | 7550 | 6990 | 6540 |
| 13 | 8000 | 8130 | 8160 | 8110 | 8440 | 8200 | 8740 | 8430 | 7980 | 7530 | 6990 | 6530 |
| 14 | 7980 | 8130 | 8170 | 8120 | 8400 | 8190 | 8820 | 8390 | 7960 | 7500 | 6970 | 6520 |
| 15 | 7970 | 8120 | 8160 | 8140 | 8360 | 8180 | 8640 | 8870 | 7940 | 7460 | 6940 | 6510 |
| 16 | 7970 | 8120 | 8140 | 8150 | 8300 | 8370 | 8530 | 9160 | 7900 | 7430 | 6930 | 6490 |
| 17 | 8020 | 8120 | 8100 | 8170 | 8260 | 8360 | 8430 | 8850 | 7890 | 7410 | 6910 | 6480 |
| 18 | 8010 | 8130 | 8120 | 8160 | 8250 | 8340 | 8350 | 8630 | 7860 | 7390 | 6890 | 6460 |
| 19 | 8000 | 8140 | 8100 | 8170 | 8250 | 8300 | 8300 | 8500 | 7840 | 7370 | 6870 | 6460 |
| 20 | 7990 | 8130 | 8110 | 8190 | 8250 | 8250 | 8260 | 8420 | 7910 | 7360 | 6860 | 6440 |
| 21 | 7980 | 8200 | 8140 | 8390 | 8230 | 8230 | 8230 | 8380 | 7900 | 7350 | 6840 | 6430 |
| 22 | 7970 | 8180 | 8260 | 9450 | 8220 | 8210 | 8200 | 8330 | 7970 | 7340 | 6830 | 6420 |
| 23 | 7940 | 8150 | 8380 | 9020 | 8200 | 8210 | 8180 | 8300 | 7970 | 7310 | 6800 | 6410 |
| 24 | 7930 | 8150 | 8430 | 8730 | 8180 | 8170 | 8190 | 8270 | 7960 | 7310 | 6770 | 6490 |
| 25 | 7920 | 8130 | 8370 | 8560 | 8150 | 8170 | 9020 | 8250 | 7950 | 7270 | 6760 | 6490 |
| 26 | 7900 | 8130 | 8320 | 8440 | 8150 | 8170 | 8910 | 8230 | 7930 | 7260 | 6730 | 6470 |
| 27 | 7890 | 8120 | 8290 | 8350 | 8150 | 8250 | 8680 | 8210 | 7910 | 7260 | 6720 | 6450 |
| 28 | 7890 | 8080 | 8240 | 8320 | 8160 | 8390 | 8530 | 8200 | 7890 | 7250 | 6700 | 6490 |
| 29 | 7880 | 8060 | 8230 | 8350 | 8160 | 8470 | 8430 | 8170 | 7870 | 7230 | 6770 | 6620 |
| 30 | 8050 | 8050 | 8210 | 8380 | --- | 8440 | 8370 | 8160 | 7850 | 7220 | 6760 | 6630 |
| 31 | 8130 | --- | 8180 | 8330 | --- | 8390 | --- | 8140 | --- | 7210 | 6750 | --- |
| MAX | 8130 | 8230 | 8430 | 9450 | 8830 | 8470 | 9020 | 9320 | 8130 | 7830 | 7180 | 6730 |
| MIN | 7880 | 8050 | 8030 | 8110 | 8150 | 8090 | 8130 | 8140 | 7840 | 7210 | 6700 | 6410 |
| (†) | 419.03 | 418.93 | 419.08 | 419.27 | 419.06 | 419.35 | 419.32 | 419.04 | 418.67 | 417.84 | 417.22 | 417.06 |
| (‡) | -10 | -80 | +130 | +150 | -170 | +230 | -20 | -230 | -290 | -640 | -460 | -120 |

CAL YR 1979 MAX 9640 MIN 5670 +2530
WTR YR 1980 MAX 9450 MIN 6410 ‡ -1510

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

## 08019500 BIG SANDY CREEK NEAR BIG SANDY, TX

LOCATION.--Lat 32°36'12", long 95°05'32", Upshur County, Hydrologic Unit 12010002, on left bank at downstream side of bridge on State Highway 155, 0.5 mi (0.8 km) upstream from St. Louis Southwestern Railway Lines bridge, 1.6 mi (2.6 km) northeast of Big Sandy, and 6.5 mi (10.5 km) upstream from mouth.

DRAINAGE AREA.--231 mi$^2$ (598 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1939 to current year.

ISED RECORDS.--WSP 1732: 1941(M), 1945-46, 1956, drainage area. WSP 1922: 1944(M), 1945-46.

GAGE.--Water-stage recorder. Datum of gage is 278.38 ft (84.850 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 5, 1940, nonrecording gage, and Oct. 5, 1940, to Nov. 26, 1951, water-stage recorder at site 1.3 mi (2.1 km) upstream at datum 3.00 ft (0.914 m) higher.

REMARKS.--Water-discharge records good. Since June 1962, flow is affected somewhat by the flood-detention pool of Lake Winnsboro (station 08019300). Records furnished by the city of Winnsboro show that 485 acre-ft (598,000 m$^3$) of sewage effluent was discharged into a tributary above station.

AVERAGE DISCHARGE.--41 years, 184 ft$^3$/s (5.211 m$^3$/s), 133,300 acre-ft/yr (164 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,000 ft$^3$/s (680 m$^3$/s) Mar. 31, 1945, gage height, 24.1 ft (7.35 m), present site and datum, from floodmark, from rating curve extended above 13,000 ft$^3$/s (368 m$^3$/s); minimum, 5.0 ft$^3$/s (0.14 m$^3$/s) Aug. 15, 1956.

Maximum stage since at least 1875, that of Mar. 31, 1945, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,440 ft$^3$/s (69.1 m$^3$/s) Jan. 25 at 0700 hours, gage height, 14.54 ft (4.432 m), no other peak above base of 1,500 ft$^3$/s (42.5 m$^3$/s); minimum, 5.6 ft$^3$/s (0.16 m$^3$/s) Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 171 | 161 | 145 | 315 | 452 | 176 | 411 | 702 | 112 | 25 | 11 | 15 |
| 2 | 140 | 149 | 136 | 267 | 405 | 173 | 472 | 904 | 102 | 21 | 10 | 15 |
| 3 | 119 | 147 | 128 | 246 | 394 | 162 | 440 | 865 | 94 | 20 | 9.9 | 15 |
| 4 | 104 | 156 | 124 | 231 | 375 | 158 | 358 | 905 | 86 | 23 | 8.7 | 14 |
| 5 | 93 | 171 | 122 | 224 | 345 | 156 | 277 | 1260 | 79 | 18 | 7.9 | 15 |
| 6 | 83 | 165 | 119 | 216 | 312 | 153 | 234 | 1210 | 72 | 14 | 7.1 | 17 |
| 7 | 75 | 137 | 115 | 209 | 281 | 152 | 209 | 885 | 66 | 12 | 6.9 | 14 |
| 8 | 68 | 114 | 112 | 202 | 306 | 150 | 189 | 670 | 60 | 11 | 6.8 | 13 |
| 9 | 62 | 113 | 111 | 197 | 526 | 145 | 172 | 489 | 68 | 10 | 7.1 | 20 |
| 10 | 57 | 131 | 111 | 191 | 592 | 142 | 161 | 356 | 63 | 9.7 | 6.8 | 19 |
| 11 | 57 | 130 | 113 | 187 | 790 | 140 | 153 | 284 | 53 | 8.7 | 8.6 | 16 |
| 12 | 55 | 131 | 134 | 179 | 1150 | 141 | 181 | 260 | 46 | 8.5 | 18 | 14 |
| 13 | 53 | 143 | 245 | 176 | 1080 | 140 | 328 | 296 | 40 | 8.1 | 16 | 14 |
| 14 | 50 | 186 | 230 | 170 | 878 | 139 | 664 | 285 | 37 | 7.4 | 18 | 13 |
| 15 | 48 | 247 | 222 | 164 | 687 | 154 | 631 | 262 | 31 | 7.2 | 19 | 11 |
| 16 | 48 | 254 | 222 | 173 | 531 | 200 | 745 | 356 | 27 | 7.0 | 20 | 11 |
| 17 | 53 | 209 | 231 | 180 | 429 | 405 | 985 | 414 | 25 | 6.9 | 19 | 12 |
| 18 | 71 | 167 | 246 | 191 | 356 | 368 | 895 | 470 | 23 | 6.7 | 17 | 13 |
| 19 | 79 | 146 | 238 | 217 | 303 | 338 | 682 | 830 | 22 | 7.4 | 15 | 13 |
| 20 | 84 | 131 | 211 | 252 | 267 | 972 | 497 | 1170 | 44 | 8.1 | 13 | 18 |
| 21 | 77 | 143 | 188 | 296 | 248 | 886 | 348 | 884 | 70 | 8.3 | 11 | 19 |
| 22 | 102 | 202 | 293 | 695 | 232 | 594 | 266 | 699 | 92 | 9.2 | 9.3 | 16 |
| 23 | 102 | 176 | 437 | 1260 | 218 | 365 | 226 | 528 | 96 | 9.8 | 9.4 | 15 |
| 24 | 88 | 172 | 437 | 1710 | 208 | 264 | 200 | 373 | 87 | 9.5 | 8.0 | 14 |
| 25 | 81 | 174 | 391 | 2320 | 198 | 222 | 204 | 275 | 81 | 9.0 | 6.8 | 17 |
| 26 | 72 | 181 | 363 | 1660 | 187 | 198 | 245 | 230 | 73 | 8.7 | 6.2 | 18 |
| 27 | 66 | 190 | 469 | 1150 | 177 | 190 | 266 | 197 | 70 | 9.4 | 6.2 | 20 |
| 28 | 64 | 186 | 578 | 890 | 170 | 226 | 797 | 174 | 62 | 15 | 7.0 | 20 |
| 29 | 62 | 171 | 575 | 728 | 165 | 236 | 1250 | 157 | 46 | 18 | 10 | 38 |
| 30 | 89 | 156 | 490 | 614 | --- | 276 | 965 | 142 | 32 | 17 | 21 | 96 |
| 31 | 225 | --- | 388 | 526 | --- | 286 | --- | 127 | --- | 14 | 17 | --- |
| TOTAL | 2598 | 4939 | 7924 | 16036 | 12262 | 8307 | 13451 | 16659 | 1859 | 367.6 | 357.7 | 565 |
| MEAN | 83.8 | 165 | 256 | 517 | 423 | 268 | 448 | 537 | 62.0 | 11.9 | 11.5 | 18.8 |
| MAX | 225 | 254 | 578 | 2320 | 1150 | 972 | 1250 | 1260 | 112 | 25 | 21 | 96 |
| MIN | 48 | 113 | 111 | 164 | 165 | 139 | 153 | 127 | 22 | 6.7 | 6.2 | 11 |
| AC-FT | 5150 | 9800 | 15720 | 31810 | 24320 | 16480 | 26680 | 33040 | 3690 | 729 | 709 | 1120 |

CAL YR 1979 TOTAL 97570.0 MEAN 267 MAX 3600 MIN 22 AC-FT 193500
WTR YR 1980 TOTAL 85325.3 MEAN 233 MAX 2320 MIN 6.2 AC-FT 169200

## 08019500 BIG SANDY CREEK NEAR BIG SANDY, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH (UNITS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 09... | 1355 | 57 | 108 | -- | 21.0 | 22 | 9 | 5.5 | 2.1 | 10 |
| NOV 16... | 1145 | 267 | 157 | -- | 9.0 | 29 | 23 | 6.8 | 2.9 | 12 |
| JAN 07... | 1340 | 209 | 183 | -- | 8.5 | 35 | 29 | 8.2 | 3.6 | 17 |
| FEB 11... | 1350 | 793 | 156 | -- | 5.0 | 28 | 24 | 6.2 | 3.1 | 15 |
| MAR 31... | 1645 | 288 | 174 | -- | 15.0 | 35 | 27 | 7.8 | 3.8 | 18 |
| MAY 12... | 1500 | 262 | 148 | -- | 22.5 | 32 | 19 | 7.5 | 3.3 | 13 |
| JUN 16... | 1350 | 26 | 124 | 7.0 | 25.0 | 24 | 10 | 5.8 | 2.4 | 12 |
| JUL 28... | 1445 | 16 | 101 | -- | 26.5 | 18 | 5 | 4.2 | 1.9 | 11 |
| SEP 08... | 1620 | 11 | 84 | -- | 25.5 | 16 | 4 | 3.7 | 1.6 | 8.2 |

| DATE | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 09... | .9 | 2.9 | 16 | 0 | 14 | 17 | .1 | 15 | 74 |
| NOV 16... | 1.0 | 4.9 | 7 | 0 | 27 | 22 | .1 | 13 | 92 |
| JAN 07... | 1.2 | 5.7 | 8 | 0 | 30 | 27 | .1 | 15 | 111 |
| FEB 11... | 1.2 | 2.7 | 5 | 0 | 25 | 24 | .1 | 11 | 90 |
| MAR 31... | 1.3 | 2.8 | 10 | 0 | 26 | 27 | .1 | 9.7 | 100 |
| MAY 12... | 1.0 | 3.6 | 16 | 0 | 22 | 19 | .1 | 11 | 87 |
| JUN 16... | 1.1 | 2.2 | 18 | 0 | 7.8 | 22 | .1 | 15 | 76 |
| JUL 28... | 1.1 | 2.2 | 16 | 0 | 5.3 | 20 | .1 | 12 | 65 |
| SEP 08... | .9 | 2.0 | 14 | 0 | 4.2 | 15 | .1 | 12 | 54 |

## 08020000 SABINE RIVER NEAR GLADEWATER, TX

**LOCATION.**--Lat 32°31'37", long 94°57'36", Gregg County, Hydrologic Unit 12010002, on right bank 46 ft (14 m) downstream from bridge on U.S. Highway 271, 0.4 mi (0.6 km) downstream from Glade Creek, 1.2 mi (1.9 km) southwest of Gladewater, and at mile 397.5 (639.6 km).

**DRAINAGE AREA.**--2,791 mi$^2$ (7,229 km$^2$).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1932 to current year.

**REVISED RECORDS.**--WSP 1732: Drainage area. WRD TX-73-1: 1972.

**GAGE.**--Water-stage recorder. Datum of gage is 243.85 ft (74.325 m) National Geodetic Vertical Datum of 1929 (Texas Reclamation Department bench mark based on Geological Survey datum). Prior to Oct. 13, 1933, nonrecording gage at same site and datum.

**REMARKS.**--Water-discharge records good. Flow is partially regulated by Lake Tawakoni (station 08017400), capacity 936,200 acre-ft (1,150 hm$^3$), Lake Fork Creek Reservoir (station 08018800), capacity 675,800 acre-ft (833 hm$^3$), and six tributary reservoirs with a combined capacity at 44,830 acre-ft (55.3 hm$^3$). There are many diversions above station for oilfield operations and municipal supply. A National Weather Service rain gage and gage-height telemeter are operated at this station.

**AVERAGE DISCHARGE.**--28 years (water years 1933-60) prior to regulation by Lake Tawakoni, 2,012 ft$^3$/s (56.98 m$^3$/s), 1,458,000 acre-ft/yr (1.80 km$^3$/yr); 20 years (water years 1961-80) regulated, 1,760 ft$^3$/s (49.84 m$^3$/s), 1,275,000 acre-ft/yr (1.57 km$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 138,000 ft$^3$/s (3,910 m$^3$/s) Apr. 2, 1945, gage height, 44.16 ft (13.460 m), from floodmark, from rating curve extended above 91,000 ft$^3$/s (2,580 m$^3$/s); minimum, 5.6 ft$^3$/s (0.16 m$^3$/s) Aug. 16, 1939.

Maximum stage since at least 1892, that of Apr. 2, 1945.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood in May 1914 reached a stage of about 41.7 ft (12.71 m), discharge, 85,900 ft$^3$/s (2,430 m$^3$/s), from information by local resident.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 5,520 ft$^3$/s (156 m$^3$/s) Feb. 5 at 0300 hours, gage height, 25.44 ft (7.754 m); minimum, 28 ft$^3$/s (0.79 m$^3$/s) Aug. 27, 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 563 | 839 | 441 | 2580 | 5240 | 1430 | 2580 | 3840 | 1900 | 141 | 58 | 46 |
| 2 | 490 | 820 | 425 | 1980 | 5140 | 1260 | 2620 | 4330 | 1660 | 119 | 52 | 51 |
| 3 | 437 | 715 | 412 | 1520 | 4940 | 1030 | 2590 | 4460 | 1500 | 104 | 49 | 50 |
| 4 | 398 | 618 | 406 | 1310 | 5110 | 946 | 2330 | 4160 | 1360 | 92 | 49 | 64 |
| 5 | 360 | 550 | 418 | 1240 | 5420 | 1050 | 1740 | 3710 | 1220 | 88 | 48 | 62 |
| 6 | 334 | 516 | 433 | 1140 | 4800 | 1120 | 1200 | 3450 | 1060 | 77 | 45 | 52 |
| 7 | 316 | 477 | 424 | 1060 | 4490 | 1000 | 948 | 3310 | 774 | 67 | 42 | 46 |
| 8 | 301 | 437 | 409 | 1030 | 3980 | 814 | 869 | 3080 | 545 | 60 | 40 | 42 |
| 9 | 300 | 416 | 396 | 980 | 3960 | 790 | 784 | 2800 | 464 | 54 | 38 | 44 |
| 10 | 309 | 419 | 389 | 923 | 4080 | 760 | 690 | 2510 | 397 | 50 | 35 | 54 |
| 11 | 296 | 431 | 389 | 895 | 4100 | 673 | 630 | 2280 | 326 | 48 | 37 | 62 |
| 12 | 283 | 483 | 448 | 882 | 4110 | 649 | 685 | 2190 | 277 | 45 | 41 | 62 |
| 13 | 272 | 575 | 665 | 857 | 4250 | 681 | 1640 | 2420 | 261 | 42 | 45 | 58 |
| 14 | 260 | 628 | 959 | 823 | 4450 | 682 | 2980 | 2360 | 257 | 40 | 43 | 52 |
| 15 | 265 | 627 | 1030 | 794 | 4630 | 795 | 3540 | 2250 | 218 | 37 | 42 | 47 |
| 16 | 275 | 602 | 942 | 793 | 4790 | 1020 | 3680 | 2730 | 180 | 35 | 47 | 43 |
| 17 | 282 | 562 | 852 | 829 | 4940 | 1530 | 3760 | 3010 | 152 | 33 | 53 | 41 |
| 18 | 287 | 499 | 846 | 875 | 5020 | 1850 | 3960 | 3220 | 135 | 35 | 53 | 43 |
| 19 | 292 | 460 | 801 | 873 | 5000 | 2070 | 4180 | 3350 | 122 | 33 | 50 | 62 |
| 20 | 295 | 438 | 730 | 1010 | 4850 | 2400 | 4390 | 3640 | 157 | 32 | 44 | 53 |
| 21 | 304 | 465 | 674 | 1630 | 4600 | 2860 | 4550 | 3980 | 284 | 33 | 40 | 51 |
| 22 | 330 | 575 | 874 | 2940 | 4270 | 3030 | 4570 | 4190 | 335 | 35 | 39 | 51 |
| 23 | 379 | 651 | 1590 | 4470 | 3890 | 2710 | 4370 | 4390 | 481 | 38 | 39 | 46 |
| 24 | 354 | 648 | 2240 | 5070 | 3320 | 1970 | 3880 | 4560 | 497 | 41 | 35 | 41 |
| 25 | 326 | 622 | 2430 | 5240 | 2490 | 1320 | 3230 | 4680 | 489 | 44 | 34 | 38 |
| 26 | 307 | 578 | 2490 | 5290 | 1730 | 986 | 2940 | 4690 | 478 | 46 | 31 | 37 |
| 27 | 296 | 538 | 2490 | 5290 | 1320 | 836 | 2850 | 4530 | 427 | 48 | 28 | 41 |
| 28 | 309 | 522 | 2550 | 5280 | 1240 | 1080 | 2950 | 4180 | 354 | 50 | 28 | 43 |
| 29 | 319 | 500 | 2700 | 5260 | 1370 | 1490 | 3280 | 3620 | 269 | 54 | 43 | 70 |
| 30 | 347 | 466 | 2850 | 5270 | --- | 2000 | 3680 | 2940 | 189 | 65 | 55 | 190 |
| 31 | 685 | --- | 2880 | 5270 | --- | 2390 | --- | 2320 | --- | 65 | 40 | --- |
| TOTAL | 10571 | 16677 | 35583 | 73404 | 117530 | 43222 | 82096 | 107180 | 16768 | 1751 | 1323 | 1642 |
| MEAN | 341 | 556 | 1148 | 2368 | 4053 | 1394 | 2737 | 3457 | 559 | 56.5 | 42.7 | 54.7 |
| MAX | 685 | 839 | 2880 | 5290 | 5420 | 3030 | 4570 | 4690 | 1900 | 141 | 58 | 190 |
| MIN | 260 | 416 | 389 | 793 | 1240 | 649 | 630 | 2190 | 122 | 32 | 28 | 37 |
| AC-FT | 20970 | 33080 | 70580 | 145600 | 233100 | 85730 | 162800 | 212600 | 33260 | 3470 | 2620 | 3260 |

CAL YR 1979 TOTAL 843721 MEAN 2312 MAX 12800 MIN 63 AC-FT 1674000
WTR YR 1980 TOTAL 507747 MEAN 1387 MAX 5420 MIN 28 AC-FT 1007000

## 08020000 SABINE RIVER NEAR GLADEWATER, TX--Continued

### WATER-QUALITY RECORDS

**PERIOD OF RECORD.**--Chemical and biochemical analyses: October 1967 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAMFLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| NOV 14... | 1530 | 637 | 245 | 7.0 | 11.0 | 10.0 | 90 | 1.6 | 45 | 23 |
| JAN 08... | 1700 | 1020 | 255 | 6.9 | 7.0 | 10.9 | 90 | 1.3 | 49 | 26 |
| APR 01... | 0930 | 2620 | 344 | 7.0 | 14.5 | 9.0 | 88 | 1.5 | 68 | 43 |
| MAY 15... | 1550 | 2190 | 186 | 6.6 | 21.0 | 6.8 | 76 | 2.5 | 45 | 22 |
| JUL 29... | 0920 | 53 | 470 | 7.2 | 28.5 | 5.2 | 67 | 2.2 | 68 | 27 |
| SEP 09... | 0920 | 43 | 370 | 7.2 | 28.0 | 5.2 | 66 | 2.9 | 67 | 13 |

| DATE | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) |
|---|---|---|---|---|---|---|---|---|---|---|
| NOV 14... | 11 | 4.2 | 28 | 1.8 | 4.7 | 27 | 0 | 26 | 44 | .1 |
| JAN 08... | 12 | 4.7 | 26 | 1.6 | 5.1 | 29 | 0 | 29 | 44 | .2 |
| APR 01... | 17 | 6.2 | 39 | 2.1 | 3.8 | 30 | 0 | 47 | 58 | .1 |
| MAY 15... | 11 | 4.2 | 16 | 1.0 | 3.8 | 28 | 0 | 26 | 24 | .2 |
| JUL 29... | 18 | 5.7 | 57 | 3.0 | 3.7 | 50 | 0 | 24 | 97 | .2 |
| SEP 09... | 18 | 5.4 | 46 | 2.4 | 4.1 | 66 | 0 | 35 | 59 | .2 |

| DATE | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NITRATE TOTAL (MG/L AS N) | NITROGEN, NITRITE TOTAL (MG/L AS N) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA TOTAL (MG/L AS N) | NITROGEN, ORGANIC TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) |
|---|---|---|---|---|---|---|---|---|---|
| NOV 14... | 13 | 144 | .11 | .00 | .11 | .10 | .79 | .89 | .100 |
| JAN 08... | 13 | 148 | .20 | .01 | .21 | .11 | 1.1 | 1.2 | .100 |
| APR 01... | 10 | 196 | -- | -- | -- | -- | -- | 1.1 | .110 |
| MAY 15... | 9.1 | 108 | .21 | .02 | .23 | .15 | 2.5 | 2.6 | .050 |
| JUL 29... | 11 | 241 | .00 | .00 | .00 | .06 | .94 | 1.0 | .070 |
| SEP 09... | 5.4 | 206 | .00 | .01 | .00 | .00 | 1.2 | 1.2 | .090 |

## 08020960 MILL CREEK NEAR HENDERSON, TX

LOCATION.--Lat 32°14'00", long 94°46'58", Rusk County, Hydrologic Unit 12010002, at left side of concrete flume located near left end of concrete overflow structure built across Mill Creek at end of a dirt access road, 0.5 mi (0.8 km) downstream from Beaver Run, 0.7 mi (1.1 km) southeast of intersection of access road with State Highway 322, 1.1 mi (1.8 km) upstream from Dogwood Creek, and 5.5 mi (8.8 km) north of the highway traffic circle located on the northeast edge of Henderson.

DRAINAGE AREA.--20.3 $mi^2$ (52.6 $km^2$).

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorders, crest-stage gages, and concrete flume with overflow. Datum of gage is 336.20 ft (102.474 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those above 50 $ft^3/s$ (1.42 $m^3/s$), which are fair. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 801 $ft^3/s$ (22.7 $m^3/s$) Mar. 31, 1979, from rating extended above 365 $ft^3/s$ (10.3 $m^3/s$) by flow over broad-crested dam formula, gage height, 4.50 ft (1.372 m); minimum, 0.36 $ft^3/s$ (0.010 $m^3/s$) July 25, 1979.

EXTEMES FOR CURRENT YEAR.--Maximum discharge, 662 $ft^3/s$ (18.7 $m^3/s$) Jan. 22 at 1045 hours, from rating extended above 365 $ft^3/s$ (10.3 $m^3/s$) by flow over broad-crested dam formula, gage height, 4.43 ft (1.350 m), no other peak above base of 600 $ft^3/s$ (17.0 $m^3/s$); minimum, 1.5 $ft^3/s$ (0.042 $m^3/s$) Aug. 24-27.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.9 | 14 | 6.9 | 14 | 16 | 34 | 12 | 9.9 | 4.9 | 2.7 | 2.4 | 1.9 |
| 2 | 4.0 | 8.1 | 6.9 | 13 | 15 | 19 | 11 | 35 | 4.6 | 2.6 | 2.3 | 1.9 |
| 3 | 3.7 | 6.4 | 6.9 | 16 | 14 | 16 | 11 | 18 | 4.3 | 2.6 | 2.3 | 1.9 |
| 4 | 3.6 | 5.8 | 6.9 | 14 | 13 | 16 | 11 | 12 | 3.8 | 2.6 | 2.2 | 1.9 |
| 5 | 3.4 | 5.5 | 7.2 | 12 | 14 | 16 | 9.7 | 10 | 3.7 | 2.4 | 2.1 | 1.8 |
| 6 | 3.4 | 5.4 | 7.7 | 12 | 13 | 14 | 9.4 | 8.8 | 3.9 | 2.4 | 2.1 | 1.7 |
| 7 | 3.4 | 5.3 | 7.2 | 12 | 12 | 15 | 9.8 | 8.4 | 3.4 | 2.4 | 2.0 | 3.8 |
| 8 | 3.4 | 5.4 | 6.9 | 11 | 89 | 15 | 8.9 | 7.7 | 3.2 | 2.4 | 1.9 | 7.8 |
| 9 | 3.4 | 9.0 | 6.8 | 11 | 222 | 14 | 8.1 | 7.7 | 3.2 | 2.4 | 1.9 | 5.5 |
| 10 | 3.4 | 9.5 | 7.0 | 10 | 68 | 14 | 8.0 | 7.2 | 3.4 | 2.4 | 1.7 | 4.2 |
| 11 | 3.4 | 6.1 | 7.6 | 11 | 32 | 14 | 17 | 6.9 | 3.0 | 2.2 | 1.7 | 3.3 |
| 12 | 3.2 | 5.2 | 18 | 9.9 | 23 | 36 | 144 | 71 | 2.9 | 2.1 | 1.7 | 2.7 |
| 13 | 3.2 | 5.1 | 62 | 9.5 | 20 | 20 | 452 | 124 | 2.8 | 2.1 | 1.8 | 2.5 |
| 14 | 3.2 | 5.1 | 17 | 9.4 | 20 | 14 | 139 | 46 | 2.7 | 2.0 | 1.9 | 2.5 |
| 15 | 3.0 | 5.1 | 12 | 9.5 | 20 | 13 | 39 | 40 | 2.4 | 1.9 | 1.7 | 2.5 |
| 16 | 3.1 | 5.3 | 11 | 16 | 18 | 17 | 22 | 271 | 2.4 | 1.7 | 1.9 | 2.5 |
| 17 | 3.6 | 5.3 | 9.4 | 14 | 17 | 17 | 18 | 54 | 2.3 | 1.7 | 2.1 | 2.2 |
| 18 | 3.7 | 5.4 | 8.9 | 11 | 17 | 14 | 16 | 21 | 2.6 | 1.7 | 1.9 | 2.1 |
| 19 | 3.3 | 5.3 | 9.5 | 12 | 17 | 13 | 14 | 14 | 2.4 | 1.7 | 1.9 | 2.1 |
| 20 | 3.2 | 5.5 | 9.7 | 17 | 16 | 16 | 13 | 12 | 5.3 | 1.7 | 1.9 | 2.1 |
| 21 | 3.0 | 44 | 9.9 | 40 | 16 | 14 | 12 | 10 | 30 | 2.1 | 1.9 | 1.9 |
| 22 | 25 | 67 | 65 | 476 | 15 | 13 | 11 | 9.2 | 12 | 9.7 | 1.8 | 1.9 |
| 23 | 11 | 20 | 143 | 137 | 14 | 13 | 10 | 8.9 | 21 | 3.2 | 1.7 | 1.9 |
| 24 | 5.2 | 12 | 211 | 40 | 14 | 18 | 11 | 7.9 | 7.6 | 2.3 | 1.7 | 2.3 |
| 25 | 4.5 | 10 | 34 | 25 | 13 | 13 | 30 | 7.6 | 4.8 | 1.9 | 1.5 | 2.3 |
| 26 | 4.0 | 9.0 | 19 | 20 | 13 | 13 | 27 | 7.6 | 3.8 | 1.6 | 1.5 | 2.2 |
| 27 | 3.8 | 8.5 | 15 | 17 | 13 | 26 | 14 | 6.6 | 3.4 | 1.7 | 1.6 | 2.3 |
| 28 | 3.8 | 7.7 | 14 | 15 | 14 | 52 | 11 | 5.7 | 3.0 | 8.7 | 1.7 | 2.3 |
| 29 | 4.0 | 7.0 | 29 | 28 | 14 | 21 | 10 | 5.4 | 2.7 | 4.2 | 2.2 | 2.4 |
| 30 | 14 | 6.9 | 21 | 30 | --- | 17 | 9.7 | 5.1 | 2.7 | 3.0 | 2.4 | 7.5 |
| 31 | 90 | --- | 15 | 22 | --- | 13 | --- | 5.0 | --- | 2.7 | 2.0 | --- |
| TOTAL | 236.8 | 319.9 | 811.4 | 1094.3 | 802 | 560 | 1118.6 | 863.6 | 158.2 | 84.8 | 59.4 | 83.9 |
| MEAN | 7.64 | 10.7 | 26.2 | 35.3 | 27.7 | 18.1 | 37.3 | 27.9 | 5.27 | 2.74 | 1.92 | 2.80 |
| MAX | 90 | 67 | 211 | 476 | 222 | 52 | 452 | 271 | 30 | 9.7 | 2.4 | 7.8 |
| MIN | 3.0 | 5.1 | 6.8 | 9.4 | 12 | 13 | 8.0 | 5.0 | 2.3 | 1.6 | 1.5 | 1.7 |
| AC-FT | 470 | 635 | 1610 | 2170 | 1590 | 1110 | 2220 | 1710 | 314 | 168 | 118 | 166 |

CAL YR 1979 TOTAL 7783.7 MEAN 21.3 MAX 359 MIN 1.8 AC-FT 15440
WTR YR 1980 TOTAL 6192.9 MEAN 16.9 MAX 476 MIN 1.5 AC-FT 12280

## 08020980 MILL CREEK NEAR LONGVIEW, TX

**LOCATION.**--Lat 32°18'18", long 94°43'41", Rusk County, Hydrologic Unit 12010002, at left side of concrete flume located near left end of concrete embankment across Mill Creek at end of dirt access road, 0.7 mi (1.1 km) east of intersection of access road with State Highway 322, 1.3 mi (2.1 km) downstream from Boggy Creek, 10.4 mi (16.7 km) upstream from Cherokee Dam on Cherokee Bayou, and 13.5 mi (21.7 km) south of intersection of U.S. Highway 80 and State Highway 149 in Longview.

**DRAINAGE AREA.**--47.9 mi² (124.1 km²).

**PERIOD OF RECORD.**--October 1978 to current year.

**GAGE.**--Water-stage recorders, crest-stage gages, and concrete flume with concrete overflow. Datum of gage is 284.00 ft (86.653 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Records good. Several observations of water temperature were made during the year.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 1,270 ft³/s (36.0 m³/s) Mar. 31, 1979, from rating extended above 539 ft³/s (15.3 m³/s) by flow over broad-crested dam formula, gage height, 5.28 ft (1.609 m); minimum, 0.07 ft³/s (0.002 m³/s), Aug. 23-27, 1980.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 773 ft³/s (21.9 m³/s) Jan. 22 at 2115 hours, from rating extended above 539 ft³/s (15.3 m³/s) by flow over broad-crested dam formula, gage height, 5.12 ft (1.561 m), no peak above base of 1,000 ft³/s (28.3 m³/s); minimum, 0.07 ft³/s (0.002 m³/s) Aug. 23-27.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 96 | 20 | 49 | 65 | 56 | 41 | 34 | 20 | 5.1 | 2.2 | .93 |
| 2 | 11 | 64 | 20 | 42 | 54 | 65 | 37 | 79 | 18 | 4.1 | 1.7 | .79 |
| 3 | 9.3 | 33 | 19 | 45 | 49 | 52 | 35 | 66 | 18 | 3.6 | 1.4 | .67 |
| 4 | 8.4 | 24 | 19 | 46 | 47 | 42 | 34 | 58 | 17 | 3.2 | 1.0 | .55 |
| 5 | 7.8 | 19 | 20 | 43 | 46 | 40 | 32 | 43 | 17 | 2.9 | .91 | .64 |
| 6 | 7.1 | 18 | 20 | 39 | 44 | 38 | 30 | 35 | 16 | 2.7 | .78 | .55 |
| 7 | 7.3 | 16 | 20 | 37 | 43 | 36 | 29 | 32 | 13 | 2.5 | .67 | .55 |
| 8 | 7.6 | 16 | 20 | 35 | 60 | [illegible] | [illegible] | 30 | 13 | 2.3 | .60 | .88 |
| 9 | 8.1 | 21 | 19 | 33 | 196 | [illegible] | [illegible] | 28 | 12 | 2.1 | .52 | 4.8 |
| 10 | 8.0 | 21 | 19 | 33 | 220 | 35 | [illegible] | 28 | 12 | 1.7 | .46 | 7.3 |
| 11 | 7.1 | 23 | 19 | 33 | 153 | 34 | 27 | 27 | 11 | 1.5 | .51 | 7.1 |
| 12 | 6.8 | 22 | 25 | 32 | 97 | 41 | 88 | 50 | 10 | 1.4 | .42 | 5.5 |
| 13 | 6.8 | 19 | 52 | 32 | 72 | 54 | 406 | 132 | 9.4 | 1.1 | .54 | 4.1 |
| 14 | 7.0 | 17 | 84 | 30 | 64 | 50 | 393 | 217 | 8.4 | 1.0 | .46 | 3.3 |
| 15 | 7.2 | 16 | 59 | 30 | 60 | 38 | 188 | 134 | 7.9 | .91 | .49 | 2.8 |
| 16 | 7.4 | 16 | 38 | 34 | 56 | 36 | 117 | 186 | 7.3 | .80 | .61 | 2.4 |
| 17 | 7.7 | 16 | 31 | 38 | 54 | 38 | 77 | 276 | 7.0 | .69 | .55 | 2.0 |
| 18 | 8.0 | 16 | 28 | 39 | 51 | 38 | 60 | 166 | 6.6 | .54 | .46 | 1.4 |
| 19 | 8.4 | 16 | 26 | 35 | 49 | 35 | 52 | 85 | 5.9 | .50 | .54 | 1.4 |
| 20 | 9.3 | 16 | 26 | 34 | 48 | 35 | 47 | 57 | 9.2 | .42 | .45 | 1.2 |
| 21 | 9.8 | 32 | 26 | 44 | 46 | 34 | 42 | 47 | 29 | .24 | .32 | 1.2 |
| 22 | 23 | 72 | 50 | 295 | 44 | 34 | 39 | 42 | 39 | .35 | .20 | 1.1 |
| 23 | 30 | 106 | 123 | 379 | 42 | 32 | 36 | 38 | 52 | .42 | .07 | 1.1 |
| 24 | 35 | 67 | 234 | 180 | 40 | 35 | 34 | 35 | 41 | .50 | .07 | .85 |
| 25 | 22 | 41 | 198 | 111 | 38 | 36 | 44 | 34 | 25 | .74 | .07 | .93 |
| 26 | 15 | 32 | 109 | 78 | 36 | 35 | 66 | 32 | 15 | .99 | .07 | 1.0 |
| 27 | 13 | 28 | 66 | 64 | 35 | 36 | 70 | 31 | 11 | 1.1 | .07 | 1.1 |
| 28 | 12 | 24 | 52 | 56 | 35 | 60 | 49 | 29 | 8.9 | 1.3 | .49 | 1.1 |
| 29 | 11 | 22 | 52 | 56 | 34 | 83 | 39 | 26 | 7.1 | 1.1 | 2.3 | 1.3 |
| 30 | 17 | 21 | 62 | 67 | --- | 61 | 35 | 23 | 6.0 | 1.4 | 2.0 | 3.7 |
| 31 | 66 | --- | 60 | 74 | --- | 48 | --- | 22 | --- | 2.1 | 1.2 | --- |
| TOTAL | 416.1 | 950 | 1616 | 2143 | 1878 | 1328 | 2226 | 2122 | 472.7 | 49.30 | 22.13 | 62.24 |
| MEAN | 13.4 | 31.7 | 52.1 | 69.1 | 64.8 | 42.8 | 74.2 | 68.5 | 15.8 | 1.59 | .71 | 2.07 |
| MAX | 66 | 106 | 234 | 379 | 220 | 83 | 406 | 276 | 52 | 5.1 | 2.3 | 7.3 |
| MIN | 6.8 | 16 | 19 | 30 | 34 | 32 | 25 | 22 | 5.9 | .24 | .07 | .55 |
| CFSM | .28 | .66 | 1.09 | 1.44 | 1.35 | .89 | 1.55 | 1.43 | .33 | .03 | .02 | .04 |
| IN. | .32 | .74 | 1.25 | 1.66 | 1.46 | 1.03 | 1.73 | 1.65 | .37 | .04 | .02 | .05 |
| AC-FT | 825 | 1880 | 3210 | 4250 | 3730 | 2630 | 4420 | 4210 | 938 | 98 | 44 | 123 |

CAL YR 1979 TOTAL 17786.10 MEAN 48.7 MAX 709 MIN 3.6 CFSM 1.02 IN 13.81 AC-FT 35280
WTR YR 1980 TOTAL 13285.47 MEAN 36.3 MAX 406 MIN .07 CFSM .76 IN 10.32 AC-FT 26350

## 08020990 TIAWICHI CREEK NEAR LONGVIEW, TX

LOCATION.--Lat 32°19'14", long 94°43'57", Rusk County, Hydrologic Unit 12010002, on downstream side of highway embankment, 120 ft (37 m) to left of downstream left abutment of main channel bridge on State Highway 322, 0.3 mi (0.5 km) downstream from Barnes Creek, 8.6 mi (13.8 km) south of intersection of Interstate Highway 20 and State Highway 149 in Longview, and 9.3 mi (15.0 km) upstream from right end of spillway of Lake Cherokee.

DRAINAGE AREA.--62.7 $mi^2$ (162.4 $km^2$).

PERIOD OF RECORD.--November 1977 to current year.

GAGE.--Water-stage recorders and concrete controls for both main and overflow channels. Datum of gage is 275.00 ft (83.820 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,320 $ft^3/s$ (65.7 $m^3/s$) Apr. 13, 1980, maximum main channel gage height, 9.97 ft (3.039 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,320 $ft^3/s$ (65.7 $m^3/s$) Apr. 13 at 2400 hours, maximum main channel gage height, 9.97 ft (3.039 m) at 2100 hours, no other peak above base of 1,500 $ft^3/s$ (42.5 $m^3/s$); no flow Aug. 23-29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.2 | 61 | 11 | 56 | 69 | 60 | 61 | 29 | 16 | 1.5 | .34 | .18 |
| 2 | 4.6 | 45 | 11 | 47 | 60 | 87 | 55 | 138 | 14 | 1.1 | .20 | .26 |
| 3 | 4.1 | 17 | 11 | 51 | 54 | 60 | 53 | 174 | 12 | .98 | .16 | .23 |
| 4 | 3.5 | 8.9 | 11 | 59 | 51 | 50 | 50 | 87 | 11 | .86 | .16 | .19 |
| 5 | 3.0 | 6.7 | 12 | 56 | 48 | 48 | 49 | 49 | 10 | .76 | .15 | .17 |
| 6 | 2.8 | 5.7 | 12 | 46 | 44 | 47 | 46 | 40 | 9.7 | .66 | .15 | .12 |
| 7 | 2.7 | 5.2 | 12 | 39 | 41 | 44 | 46 | 31 | 8.8 | .58 | .15 | .10 |
| 8 | 2.7 | 5.3 | 12 | 32 | 83 | 44 | 45 | 25 | 8.8 | .58 | .14 | .16 |
| 9 | 2.5 | 8.9 | 11 | 29 | 907 | 44 | 42 | 23 | 8.3 | .58 | .13 | 1.7 |
| 10 | 2.4 | 15 | 11 | 26 | 808 | 44 | 39 | 21 | 8.3 | .49 | .12 | 1.2 |
| 11 | 2.5 | 33 | 11 | 28 | 286 | 44 | 41 | 19 | 7.7 | .49 | .11 | .83 |
| 12 | 2.5 | 18 | 17 | 27 | 122 | 56 | 317 | 44 | 7.2 | .36 | .08 | .58 |
| 13 | 2.5 | 10 | 53 | 24 | 85 | 80 | 1750 | 393 | 6.8 | .42 | .12 | .38 |
| 14 | 2.5 | 8.2 | 87 | 23 | 74 | 63 | 1530 | 479 | 5.5 | .36 | .14 | .54 |
| 15 | 2.6 | 7.5 | 60 | 24 | 67 | 50 | 373 | 228 | 4.8 | .30 | .15 | .44 |
| 16 | 2.6 | 7.1 | 40 | 29 | 63 | 48 | 122 | 677 | 3.8 | .25 | .25 | .34 |
| 17 | 2.8 | 6.8 | 28 | 38 | 59 | 50 | 76 | 772 | 3.5 | .20 | .24 | .27 |
| 18 | 3.1 | 6.9 | 22 | 38 | 57 | 49 | 61 | 192 | 2.9 | .20 | .28 | .28 |
| 19 | 3.4 | 6.8 | 18 | 30 | 59 | 46 | 55 | 80 | 2.4 | .20 | .26 | 1.0 |
| 20 | 3.3 | 6.7 | 18 | 38 | 57 | 46 | 50 | 55 | 4.5 | .16 | .19 | .38 |
| 21 | 2.9 | 31 | 19 | 78 | 57 | 47 | 47 | 48 | 19 | .16 | .14 | .27 |
| 22 | 8.9 | 146 | 56 | 653 | 54 | 46 | 43 | 44 | 34 | .20 | .05 | .18 |
| 23 | 18 | 235 | 281 | 1140 | 52 | 44 | 39 | 40 | 72 | .36 | .00 | .14 |
| 24 | 27 | 78 | 926 | 383 | 49 | 63 | 36 | 36 | 67 | .42 | .00 | .14 |
| 25 | 14 | 46 | 544 | 121 | 46 | 84 | 47 | 33 | 19 | .36 | .00 | .13 |
| 26 | 8.8 | 31 | 129 | 83 | 44 | 56 | 72 | 31 | 8.9 | .30 | .00 | .17 |
| 27 | 6.6 | 22 | 68 | 70 | 44 | 56 | 70 | 27 | 5.5 | .36 | .00 | .22 |
| 28 | 5.4 | 16 | 55 | 60 | 44 | 120 | 48 | 23 | 3.8 | .98 | .00 | .53 |
| 29 | 5.0 | 13 | 56 | 59 | 44 | 160 | 37 | 20 | 2.7 | 1.1 | .00 | 1.0 |
| 30 | 7.2 | 12 | 68 | 67 | --- | 130 | 31 | 19 | 2.0 | .77 | .04 | 2.3 |
| 31 | 30 | --- | 68 | 73 | --- | 87 | --- | 16 | --- | .53 | .11 | --- |
| TOTAL | 195.1 | 919.7 | 2738 | 3527 | 3528 | 1953 | 5331 | 3893 | 389.9 | 16.57 | 3.86 | 14.43 |
| MEAN | 6.29 | 30.7 | 88.3 | 114 | 122 | 63.0 | 178 | 126 | 13.0 | .53 | .12 | .48 |
| MAX | 30 | 235 | 926 | 1140 | 907 | 160 | 1750 | 772 | 72 | 1.5 | .34 | 2.3 |
| MIN | 2.4 | 5.2 | 11 | 23 | 41 | 44 | 31 | 16 | 2.0 | .16 | .00 | .10 |
| CFSM | .10 | .49 | 1.41 | 1.82 | 1.95 | 1.01 | 2.84 | 2.01 | .21 | .008 | .002 | .008 |
| IN. | .12 | .55 | 1.62 | 2.09 | 2.09 | 1.16 | 3.16 | 2.31 | .23 | .01 | .00 | .01 |
| AC-FT | 387 | 1820 | 5430 | 7000 | 7000 | 3870 | 10570 | 7720 | 773 | 33 | 7.7 | 29 |

CAL YR 1979 TOTAL 31876.59 MEAN 87.3 MAX 1780 MIN .99 CFSM 1.39 IN 18.91 AC-FT 63230
WTR YR 1980 TOTAL 22509.56 MEAN 61.5 MAX 1750 MIN .00 CFSM .98 IN 13.35 AC-FT 44650

## 08021500 LAKE CHEROKEE NEAR LONGVIEW, TX

LOCATION.--Lat 32°22'36", long 94°38'30", Gregg-Rusk County line, Hydrologic Unit 12010002, on left wingwall of intake structure of electric generating plant of Southwestern Electric Power Co., 2.3 mi (3.7 km) upstream from dam on Cherokee Bayou, 10 mi (16 km) upstream from Sabine River, and 10.3 mi (16.6 km) southeast of Longview.

DRAINAGE AREA.--158 $mi^2$ (409 $km^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1951 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Nonrecording gage, Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam 4,000 ft (1,220 m) long. An uncontrolled concrete spillway 828 ft (252 m) long is located at left end of dam. An emergency spillway, 160 ft (49 m) wide, is cut in natural ground at right end of dam. Storage began in October 1948 and dam was completed Nov. 19, 1948. Lake was built for recreational purposes, to supply cooling water for generating plant of Southwestern Electric Power Co., and for municipal use by city of Longview. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

|  | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam...................................................... | 295.0 | - |
| Design flood .................................................... | 291.0 | - |
| Crest of spillway................................................ | 287.7 | - |
| Crest of spillway (top of conservation pool)..................... | 280.0 | 46,710 |
| Lowest gated outlet (invert)..................................... | 260.0 | 4,510 |

COOPERATION.--Elevation record was furnished by Southwestern Electric Power Co. Record of diversions were furnished by city of Longview. Capacity curve data from "Report of Sedimentation of Lake Cherokee, Gregg & Rusk Counties, Apr. 4 to May 13, 1960", by Soil Conservation Service.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents observed, 71,170 acre-ft (87.8 $hm^3$) May 3, 1959, elevation, 285.5 ft (87.02 m); minimum observed, 30,500 acre-ft (37.6 $hm^3$) Nov. 12-14, 1978, elevation, 275.20 ft (83.881 m).

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents observed, 50,700 acre-ft (62.5 $hm^3$) Apr. 14, elevation, 281.00 ft (85.649 m); minimum observed, 34,940 acre-ft (43.1 $hm^3$) Sept. 28-30, elevation, 276.70 ft (84.338 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

|  |  |  |  |
|---|---|---|---|
| 276.0 | 32,790 | 280.0 | 46,700 |
| 278.0 | 39,300 | 282.0 | 54,900 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 0800

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 47100 | 46710 | 47100 | 47490 | 47490 | 47490 | 47880 | 47490 | 46710 | 46710 | 42160 | 37570 |
| 2 | 47100 | 46710 | 47100 | 47490 | 47490 | 47490 | 47880 | 48270 | 46710 | 46710 | 42160 | 37570 |
| 3 | 47100 | 46710 | 47100 | 47490 | 47490 | 47490 | 47880 | 48270 | 46710 | 46320 | 42160 | 37230 |
| 4 | 46710 | 46710 | 47100 | 47490 | 47490 | 47490 | 47880 | 48270 | 46710 | 46320 | 42160 | 37570 |
| 5 | 46710 | 46710 | 47100 | 47490 | 47880 | 47490 | 47880 | 48270 | 46710 | 46320 | 41790 | 37570 |
| 6 | 46710 | 46710 | 47100 | 47490 | 47880 | 47490 | 47880 | 48270 | 46710 | 45930 | 41430 | 37230 |
| 7 | 46710 | 46710 | 47100 | 47490 | 47880 | 47490 | 47880 | 47290 | 46710 | 45930 | 41430 | 37230 |
| 8 | 46710 | 46710 | 47100 | 47490 | 47880 | 47490 | 47490 | 47490 | 46710 | 45930 | 41430 | 37230 |
| 9 | 46710 | 46710 | 47100 | 47490 | 48670 | 47490 | 47490 | 47100 | 46320 | 45930 | 40350 | 37230 |
| 10 | 46710 | 46710 | 47100 | 47490 | 48670 | 47490 | 47490 | 47100 | 46320 | 45930 | 40350 | 37230 |
| 11 | 46710 | 46710 | 47100 | 47490 | 48670 | 47490 | 47490 | 47100 | 45930 | 45930 | 40350 | 37230 |
| 12 | 46710 | 46710 | 47490 | 47490 | 48670 | 47490 | 47880 | 47100 | 45930 | 45930 | 40350 | 36890 |
| 13 | 45930 | 46710 | 47490 | 47490 | 48270 | 47490 | 50290 | 48270 | 45930 | 45930 | 40000 | 36560 |
| 14 | 45930 | 46710 | 47490 | 47490 | 48270 | 47490 | 50700 | 48270 | 45930 | 44390 | 40000 | 36560 |
| 15 | 45930 | 46710 | 47490 | 47490 | 47490 | 47490 | 49070 | 48670 | 45930 | 44390 | 40000 | 36230 |
| 16 | 45930 | 46710 | 47880 | 47490 | 47490 | 47490 | 48270 | 49070 | 45930 | 44390 | 39650 | 36230 |
| 17 | 45930 | 46710 | 47880 | 47490 | 47490 | 47490 | 47880 | 49070 | 45930 | 44390 | 39300 | 36230 |
| 18 | 45930 | 46710 | 47880 | 47490 | 47880 | 47490 | 47880 | 49070 | 45930 | 44010 | 39300 | 35900 |
| 19 | 45930 | 46710 | 47100 | 47490 | 47880 | 47490 | 48270 | 48870 | 45930 | 44010 | 39300 | 35900 |
| 20 | 46320 | 46710 | 47100 | 47490 | 47880 | 47490 | 47880 | 48270 | 46320 | 44010 | 39300 | 35580 |
| 21 | 45930 | 46710 | 47490 | 47880 | 47880 | 47490 | 47490 | 48270 | 46320 | 43640 | 38950 | 35580 |
| 22 | 46320 | 46710 | 47490 | 48270 | 47880 | 47490 | 47490 | 48270 | 46320 | 43270 | 38600 | 35580 |
| 23 | 46320 | 46710 | 48270 | 48270 | 47490 | 47880 | 47490 | 47880 | 46320 | 42900 | 38600 | 35580 |
| 24 | 45930 | 46710 | 48270 | 48270 | 47490 | 47490 | 47490 | 47880 | 46710 | 42530 | 38600 | 35260 |
| 25 | 45930 | 47490 | 48670 | 48270 | 47490 | 47100 | 47880 | 47880 | 47100 | 42530 | 38250 | 35260 |
| 26 | 45930 | 47490 | 48670 | 48270 | 47490 | 47490 | 47880 | 47880 | 47100 | 42530 | 38250 | 35260 |
| 27 | 45930 | 47490 | 48670 | 48270 | 47490 | 47490 | 47880 | 47880 | 47100 | 42530 | 38250 | 35260 |
| 28 | 45930 | 47100 | 48670 | 48270 | 47490 | 47490 | 47490 | 47490 | 47100 | 42530 | 37910 | 34940 |
| 29 | 45930 | 47100 | 48670 | 48270 | 47490 | 47880 | 47490 | 47490 | 47100 | 42530 | 37910 | 34940 |
| 30 | 45930 | 47100 | 48670 | 48670 | --- | 47880 | 47490 | 47490 | 47100 | 42530 | 37910 | 34940 |
| 31 | 46710 | --- | 48670 | 48670 | --- | 47490 | --- | 47490 | --- | 42160 | 37570 | --- |
| MAX | 47100 | 47490 | 48670 | 48670 | 48670 | 47880 | 50700 | 49070 | 47100 | 46710 | 42160 | 37570 |
| MIN | 45930 | 46710 | 47100 | 47490 | 47490 | 47100 | 47490 | 47100 | 45930 | 42160 | 37570 | 34940 |
| (†) | 280.00 | 280.10 | 280.50 | 280.50 | 280.20 | 280.20 | 280.20 | 280.20 | 280.10 | 278.80 | 277.50 | 276.70 |
| (‡) | -780 | +390 | +1570 | 0 | -1180 | 0 | 0 | 0 | -390 | -4940 | -4590 | -2630 |
| (††) | 1300 | 1050 | 1100 | 1060 | 969 | 901 | 919 | 805 | 1110 | 1840 | 1880 | 1410 |

CAL YR 1979 MAX 49880 MIN 35260 ‡ +14670 †† 15850
WTR YR 1980 MAX 50700 MIN 34940 ‡ -12550 †† 14340

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal use by city of Longview.

## 08021500 LAKE CHEROKEE NEAR LONGVIEW, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 14... | 0730 | 145 | 10.0 | 26 | 21 | 6.3 | 2.6 | 14 | 1.2 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | |
| 14... | 2.2 | 7 | 0 | 15 | 25 | .2 | 13 | 82 |

## 08022040 SABINE RIVER NEAR BECKVILLE, TX

**LOCATION.**--Lat 32°19'38", long 94°21'12", Panola County, Hydrologic Unit 12010002, on downstream side of highway embankment near right end of downstream bridge on U.S. Highway 59, 0.9 mi (1.4 km) upstream from Eightmile Creek, 6.0 mi (9.7 km) upstream from Farm Road 1794, 8.4 mi (13.5 km) northeast of Beckville, 12.4 mi (20.0 km) downstream from State Highway 43, and at mile 327.0 (526.3 km).

**DRAINAGE AREA.**--3,589 mi$^2$ (9,296 km$^2$).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1938 to current year. Prior to October 1978, published as "near Tatum".

**GAGE.**--Water-stage recorder and crest-stage gage. Datum of gage is 190.00 ft (57.912 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1978, at site 12.4 mi (20.0 km) upstream at datum 14.18 ft (4.322 m) higher. Prior to Sept. 21, 1945, nonrecording gage.

**REMARKS.**--Water-discharge records fair except those for period July 15 to Sept. 30, which are good. Flow is partly regulated by Lake Tawakoni (station 08017400) located 187 mi (301 km) upstream and by six reservoirs on tributary streams, combined capacity, 1,022,000 acre-ft (1.26 km$^3$). Several diversions above station and below Lake Tawakoni for oilfield operation, municipal, and industrial uses. Low flows are sustained by sewage effluents returned to the river above the station. During the current year, the city of Longview reported that 8,530 acre-ft (10.5 hm$^3$) of sewage effluent was returned to the river above this station. For statement regarding regulation by Soil Conservation Service [illegible]ater-retarding structures, see station 08020000.

**AVERAGE DISCHARGE.**--22 years (water years 1939-60) prior to regulation by Lake Tawakoni, 2,663 ft$^3$/s (75.42 m$^3$/s), 1,929,000 acre-ft/yr (2.38 km$^3$/yr); 20 years (water years 1961-80) regulated, 2,328 ft$^3$/s (65.93 m$^3$/s), 1,687,000 acre-ft/yr (2.08 km$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 123,000 ft$^3$/s (3,480 m$^3$/s) Apr. 4, 1945, gage height, 33.80 ft (10.302 m), site and datum then in use, from graph based on gage readings, from rating curve extended above 66,000 ft$^3$/s (1,870 m$^3$/s) on basis of partly estimated measurement of 88,900 ft$^3$/s (2,520 m$^3$/s); minimum observed, 2.4 ft$^3$/s (0.068 m$^3$/s) Aug. 11, 12, 1964.

Maximum stage since at least 1884, that of Apr. 4, 1945.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood in May 1884 reached a stage of about 2 ft (0.61 m) lower than flood of Apr. 4, 1945. These dates and gage heights are based on information for stations near Tatum (08022000) and at Logansport, La. (08022500).

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 9,760 ft$^3$/s (276 m$^3$/s) Feb. 11, gage height, 24.51 ft (7.471 m); minimum, 38 ft$^3$/s (1.08 m$^3$/s) Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1700 | 1420 | 792 | 3710 | 6790 | 2020 | 4100 | 3640 | 3380 | 361 | 61 | 47 |
| 2 | 1150 | 1340 | 739 | 3560 | 6840 | 2520 | 3750 | 4430 | 2400 | 275 | 60 | 54 |
| 3 | 935 | 1190 | 703 | 3240 | 6900 | 2540 | 3580 | 6190 | 2100 | 214 | 64 | 53 |
| 4 | 810 | 1080 | 676 | 3130 | 6970 | 2000 | 3480 | 6440 | 1940 | 170 | 56 | 52 |
| 5 | 641 | 931 | 689 | 2820 | 6990 | 1730 | 3300 | 6120 | 1730 | 141 | 57 | 48 |
| 6 | 563 | 810 | 674 | 2350 | 6960 | 1610 | 2740 | 5470 | 1590 | 112 | 61 | 51 |
| 7 | 508 | 723 | 673 | 2080 | 6850 | 1730 | 2100 | 4850 | 1470 | 95 | 55 | 50 |
| 8 | 458 | 660 | 659 | 1910 | 6800 | 1750 | 1650 | 4340 | 1310 | 86 | 53 | 52 |
| 9 | 432 | 627 | 626 | 1770 | 7990 | 1590 | 1470 | 3920 | 1130 | 81 | 55 | 51 |
| 10 | 409 | 838 | 599 | 1680 | 9340 | 1410 | 1260 | 3610 | 956 | 77 | 59 | 52 |
| 11 | 390 | 929 | 581 | 1610 | 9510 | 1260 | 1140 | 3350 | 791 | 76 | 57 | 79 |
| 12 | 368 | 735 | 607 | 1560 | 8730 | 1260 | 2960 | 3040 | 634 | 74 | 54 | 76 |
| 13 | 350 | 651 | 1080 | 1480 | 8040 | 1670 | 6000 | 4090 | 518 | 70 | 47 | 55 |
| 14 | 308 | 669 | 1760 | 1420 | 7260 | 1510 | 8440 | 5210 | 455 | 66 | 42 | 53 |
| 15 | 305 | 741 | 1760 | 1410 | 6600 | 1310 | 8930 | 5110 | 417 | 64 | 45 | 56 |
| 16 | 295 | 781 | 1690 | 1390 | 6100 | 1240 | 7910 | 6000 | 372 | 57 | 50 | 53 |
| 17 | 305 | 787 | 1600 | 1480 | 5780 | 1360 | 6700 | 8090 | 325 | 48 | 52 | 52 |
| 18 | 308 | 773 | 1430 | 1550 | 5670 | 1780 | 5840 | 8140 | 288 | 46 | 53 | 50 |
| 19 | 325 | 731 | 1290 | 1500 | 5760 | 2160 | 5170 | 7140 | 256 | 49 | 52 | 48 |
| 20 | 318 | 671 | 1240 | 1590 | 5800 | 2490 | 4740 | 5950 | 240 | 48 | 52 | 79 |
| 21 | 322 | 716 | 1170 | 2520 | 5860 | 2750 | 4650 | 5110 | 405 | 47 | 51 | 110 |
| 22 | 386 | 2150 | 1260 | 4690 | 5800 | 3120 | 4930 | 4670 | 783 | 44 | 51 | 82 |
| 23 | 563 | 3190 | 2480 | 8190 | 5680 | 3480 | 5010 | 4770 | 802 | 48 | 49 | 65 |
| 24 | 495 | 2710 | 5060 | 9050 | 5480 | 3780 | 4620 | 4610 | 834 | 52 | 50 | 52 |
| 25 | 440 | 1970 | 6460 | 8660 | 5130 | 3590 | 4850 | 4520 | 745 | 52 | 46 | 52 |
| 26 | 383 | 1520 | 6100 | 8160 | 4470 | 2780 | 5340 | 4570 | 696 | 51 | 39 | 52 |
| 27 | 312 | 1310 | 5330 | 7560 | 3440 | 1970 | 5290 | 4650 | 641 | 50 | 42 | 51 |
| 28 | 318 | 1130 | 4510 | 7090 | 2700 | 1960 | 4500 | 4670 | 587 | 53 | 43 | 50 |
| 29 | 372 | 983 | 3960 | 6790 | 1980 | 2690 | 3940 | 4660 | 522 | 76 | 45 | 49 |
| 30 | 386 | 868 | 3780 | 6720 | --- | 3660 | 3620 | 4520 | 444 | 82 | 48 | 52 |
| 31 | 802 | --- | 3770 | 6740 | --- | 4180 | --- | 4160 | --- | 74 | 50 | --- |
| TOTAL | 15657 | 33634 | 63748 | 117410 | 182220 | 68900 | 132010 | 156040 | 28761 | 2839 | 1599 | 1726 |
| MEAN | 505 | 1121 | 2056 | 3787 | 6283 | 2223 | 4400 | 5034 | 959 | 91.6 | 51.6 | 57.5 |
| MAX | 1700 | 3190 | 6460 | 9050 | 9510 | 4180 | 8930 | 8140 | 3380 | 361 | 64 | 110 |
| MIN | 295 | 627 | 581 | 1390 | 1980 | 1240 | 1140 | 3040 | 240 | 44 | 39 | 47 |
| AC-FT | 31060 | 66710 | 126400 | 232900 | 361400 | 136700 | 261800 | 309500 | 57050 | 5630 | 3170 | 3420 |

CAL YR 1979 TOTAL 1432477 MEAN 3925 MAX 13100 MIN 92 AC-FT 2841000
WTR YR 1980 TOTAL 804544 MEAN 2198 MAX 9510 MIN 39 AC-FT 1596000

## 08022040 SABINE RIVER NEAR BECKVILLE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: February 1952 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: March 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1952 to current year.
WATER TEMPERATURES: February 1952 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request. Formerly published as 08022000 Sabine River near Tatum.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 3,040 micromhos Jan. 13, 1966; minimum, 53 micromhos Mar. 31, 1979.
WATER TEMPERATURES (water years 1952-62, 1964-79): Maximum, 38.0°C July 8, 1969; minimum, 2.0°C Jan. 12, 13, 1962, Feb. 9, 1979.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,270 micromhos Sept. 11; minimum daily, 64 micromhos Jan. 24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | COLOR (PLATINUM COBALT UNITS) | TURBIDITY (NTU) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 01... | 2200 | 1480 | 234 | -- | 30.0 | -- | -- | -- | -- | -- | 42 | 23 |
| NOV 14... | 1210 | 674 | 585 | 6.9 | 10.5 | 15 | 6.0 | 10.3 | 90 | 1.6 | 64 | 40 |
| JAN 08... | 1430 | 1890 | 310 | 6.6 | 8.0 | 50 | 18 | 10.8 | 91 | 1.6 | 51 | 33 |
| FEB 12... | 1115 | 8770 | 177 | -- | 6.0 | -- | -- | -- | -- | -- | 40 | 25 |
| APR 02... | 1240 | 3780 | 281 | 6.9 | 16.0 | 55 | 34 | 9.8 | 99 | 1.7 | 51 | 33 |
| MAY 14... | 1420 | 5330 | 210 | 6.8 | 22.0 | 80 | 74 | 5.4 | 61 | 3.8 | 42 | 21 |
| JUL 31... | 1150 | 78 | 860 | 8.0 | 31.0 | 30 | 10 | 8.4 | 112 | 3.5 | 160 | 95 |
| SEP 11... | 1025 | 79 | 1270 | 7.6 | 28.0 | 60 | 14 | 5.9 | 75 | 5.8 | 120 | 44 |

| DATE | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 01... | 12 | 2.9 | 26 | 1.7 | 3.9 | 23 | 0 | 27 | 42 | .1 | 14 |
| NOV 14... | 17 | 5.3 | 88 | 4.8 | 5.2 | 30 | 0 | 28 | 140 | .1 | 16 |
| JAN 08... | 13 | 4.5 | 34 | 2.1 | 4.2 | 22 | 0 | 31 | 58 | .1 | 15 |
| FEB 12... | 11 | 3.0 | 17 | 1.2 | 2.9 | 18 | 0 | 22 | 31 | .1 | 10 |
| APR 02... | 13 | 4.6 | 32 | 1.9 | 2.8 | 22 | 0 | 31 | 48 | .1 | 13 |
| MAY 14... | 11 | 3.6 | 23 | 1.5 | 3.7 | 26 | 0 | 23 | 35 | .1 | 8.8 |
| JUL 31... | 53 | 7.2 | 93 | 3.2 | 5.4 | 82 | 0 | 80 | 160 | .5 | 6.6 |
| SEP 11... | 33 | 9.9 | 200 | 7.8 | 8.0 | 96 | 0 | 100 | 280 | .7 | .8 |

| DATE | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) | SOLIDS, VOLATILE, SUSPENDED (MG/L) | NITROGEN, NITRATE TOTAL (MG/L AS N) | NITROGEN, NITRITE TOTAL (MG/L AS N) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA TOTAL (MG/L AS N) | NITROGEN, ORGANIC TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 01... | 139 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| NOV 14... | 314 | 4 | 0 | .46 | .02 | .48 | .05 | .83 | .88 | .190 | 8.6 |
| JAN 08... | 171 | 53 | 33 | .30 | .01 | .31 | .18 | 1.1 | 1.3 | .110 | 7.3 |
| FEB 12... | 106 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| APR 02... | 156 | 67 | 11 | -- | -- | -- | -- | -- | 1.3 | .120 | 11 |
| MAY 14... | 121 | 78 | 0 | .24 | .02 | .26 | .17 | 2.2 | 2.4 | .270 | 9.6 |
| JUL 31... | 447 | 20 | 19 | .00 | .00 | .00 | .06 | 1.3 | 1.4 | .080 | 15 |
| SEP 11... | 681 | 30 | 4 | .04 | .01 | .05 | .00 | 1.5 | 1.5 | .100 | 15 |

## 08022040 SABINE RIVER NEAR BECKVILLE, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | ARSENIC DISSOLVED (UG/L AS AS) | BARIUM, DISSOLVED (UG/L AS BA) | CADMIUM DISSOLVED (UG/L AS CD) | CHROMIUM, DISSOLVED (UG/L AS CR) | COPPER, DISSOLVED (UG/L AS CU) | IRON, DISSOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| JAN 08... | 1430 | 0 | 80 | <1 | 0 | 2 | 440 |
| APR 02... | 1240 | 1 | 80 | 2 | 0 | 0 | 420 |
| MAY 14... | 1420 | 1 | 60 | <1 | 0 | 2 | 210 |
| JUL 31... | 1150 | 1 | 100 | <1 | 0 | 0 | 30 |
| SEP 11... | 1025 | 1 | 100 | 3 | 0 | 4 | 10 |

| DATE | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY DISSOLVED (UG/L AS HG) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| JAN 08... | 3 | 120 | .1 | 0 | 0 | 9 |
| APR 02... | 0 | 70 | .0 | 0 | 0 | 6 |
| MAY 14... | 0 | 8 | .0 | 0 | 0 | 8 |
| JUL 31... | 2 | 680 | .0 | 1 | 0 | 8 |
| SEP 11... | 1 | 700 | .0 | 0 | 0 | 20 |

| DATE | TIME | PCB, TOTAL (UG/L) | PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) | NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | CHLORDANE, TOTAL (UG/L) | CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| APR 02... | 1240 | .0 | 0 | .00 | .00 | .0 | .0 | 0 | .00 | .0 |
| JUL 31... | 1150 | .0 | 2 | .00 | .00 | .0 | .0 | 0 | .00 | .0 |

| DATE | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) | DIAZINON, TOTAL (UG/L) | DIELDRIN TOTAL (UG/L) | DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | ENDOSULFAN, TOTAL (UG/L) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| APR 02... | .00 | .0 | .00 | .0 | .00 | .00 | .0 | .00 | .00 | .0 |
| JUL 31... | .00 | .0 | .00 | .0 | .01 | .00 | .0 | .00 | .00 | .0 |

| DATE | ETHION, TOTAL (UG/L) | HEPTACHLOR, TOTAL (UG/L) | HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) | HEPTACHLOR EPOXIDE TOTAL (UG/L) | HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) | MALATHION, TOTAL (UG/L) | METHOXYCHLOR, TOTAL (UG/L) | METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| APR 02... | .00 | .00 | .0 | .00 | .0 | .00 | .0 | .00 | .00 | .0 |
| JUL 31... | .00 | .00 | .0 | .00 | .0 | .00 | .0 | .00 | .00 | .0 |

| DATE | METHYL PARATHION, TOTAL (UG/L) | METHYL TRITHION, TOTAL (UG/L) | MIREX, TOTAL (UG/L) | PARATHION, TOTAL (UG/L) | TOXAPHENE, TOTAL (UG/L) | TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) | TOTAL TRITHION (UG/L) | 2,4-D, TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) | SILVEX, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| APR 02... | .00 | .00 | .00 | .00 | 0 | 0 | .00 | .02 | .00 | .00 |
| JUL 31... | .00 | .00 | .00 | .00 | 0 | 0 | .00 | .00 | .00 | .00 |

## 08022040 SABINE RIVER NEAR BECKVILLE, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 15657 | 364 | 203 | 8580 | 65 | 2740 | 39 | 1650 | 65 |
| NOV. | 1979 | 33634 | 331 | 184 | 16700 | 58 | 5260 | 36 | 3240 | 59 |
| DEC. | 1979 | 63748 | 349 | 194 | 33400 | 62 | 10600 | 37 | 6440 | 62 |
| JAN. | 1980 | 117410 | 204 | 114 | 36100 | 34 | 10700 | 23 | 7210 | 37 |
| FEB. | 1980 | 182220 | 209 | 117 | 57500 | 34 | 16800 | 23 | 11500 | 39 |
| MAR. | 1980 | 68900 | 287 | 160 | 29800 | 49 | 9070 | 32 | 5870 | 52 |
| APR. | 1980 | 132010 | 237 | 132 | 47100 | 39 | 14000 | 26 | 9370 | 43 |
| MAY | 1980 | 156040 | 206 | 115 | 48600 | 34 | 14200 | 23 | 9750 | 38 |
| JUNE | 1980 | 28761 | 310 | 173 | 13400 | 53 | 4150 | 34 | 2620 | 56 |
| JULY | 1980 | 2839 | 528 | 292 | 2240 | 100 | 785 | 53 | 409 | 89 |
| AUG. | 1980 | 1599 | 870 | 479 | 2070 | 190 | 819 | 81 | 348 | 140 |
| SEPT | 1980 | 1726 | 1060 | 582 | 2710 | 250 | 1160 | 93 | 432 | 160 |
| TOTAL | | 804544 | ** | ** | 298000 | ** | 90300 | ** | 58900 | ** |
| WTD. AVG. | | 2198 | 246 | 137 | ** | 42 | ** | 27 | ** | 45 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 234 | 280 | 362 | 232 | 184 | 267 | 266 | 260 | 252 | 365 | 740 | 920 |
| 2 | 244 | 272 | 412 | 242 | 177 | 268 | 281 | 210 | 256 | 393 | 754 | 910 |
| 3 | 266 | 280 | 428 | 256 | 185 | 270 | 394 | 186 | 265 | 398 | 735 | 915 |
| 4 | 304 | 216 | 444 | 272 | 191 | 303 | 372 | 170 | 266 | 403 | 755 | 930 |
| 5 | 308 | 274 | 484 | 270 | 204 | 256 | 355 | 197 | 269 | 410 | 749 | 995 |
| 6 | 315 | 288 | 536 | 274 | 223 | 268 | 340 | 205 | 267 | 413 | 740 | 1010 |
| 7 | 322 | 295 | 580 | 314 | 237 | 282 | 325 | 216 | 272 | 415 | 753 | 1030 |
| 8 | 332 | 298 | 620 | 316 | 191 | 300 | 310 | 207 | 278 | 432 | 757 | 1100 |
| 9 | 402 | 286 | 666 | 344 | 200 | 326 | 292 | 222 | 290 | 449 | 771 | 1160 |
| 10 | 450 | 300 | 530 | 306 | 187 | 297 | 298 | 245 | 305 | 465 | 815 | 1220 |
| 11 | 446 | 284 | 486 | 304 | 183 | 294 | 306 | 264 | 315 | 482 | 859 | 1270 |
| 12 | 420 | 384 | 454 | 302 | 177 | 293 | 260 | 266 | 330 | 499 | 920 | 1240 |
| 13 | 402 | 374 | 440 | 340 | 182 | 299 | 240 | 225 | 360 | 518 | 1000 | 1190 |
| 14 | 392 | 688 | 420 | 312 | 190 | 303 | 200 | 197 | 390 | 529 | 1060 | 1110 |
| 15 | 398 | 628 | 432 | 326 | 200 | 304 | 188 | 199 | 420 | 535 | 1070 | 1080 |
| 16 | 410 | 410 | 372 | 320 | 210 | 304 | 187 | 181 | 400 | 556 | 1050 | 1070 |
| 17 | 428 | 284 | 336 | 312 | 217 | 275 | 163 | 173 | 390 | 582 | 995 | 1060 |
| 18 | 438 | 402 | 286 | 300 | 220 | 244 | 200 | 170 | 389 | 600 | 963 | 1030 |
| 19 | 488 | 448 | 320 | 296 | 222 | 325 | 228 | 200 | 393 | 630 | 930 | 1040 |
| 20 | 500 | 466 | 364 | 282 | 225 | 330 | 225 | 217 | 392 | 651 | 898 | 1070 |
| 21 | 510 | 450 | 394 | 252 | 228 | 331 | 227 | 230 | 410 | 695 | 906 | 1040 |
| 22 | 524 | 350 | 390 | 136 | 230 | 311 | 220 | 247 | 412 | 760 | 900 | 1010 |
| 23 | 464 | 232 | 528 | 100 | 228 | 290 | 215 | 220 | 406 | 820 | 910 | 1050 |
| 24 | 394 | 300 | 450 | 64 | 236 | 281 | 224 | 199 | 430 | 790 | 907 | 1090 |
| 25 | 408 | 320 | 250 | 166 | 250 | 278 | 226 | 195 | 425 | 785 | 915 | 1120 |
| 26 | 476 | 322 | 255 | 172 | 256 | 265 | 209 | 190 | 420 | 810 | 922 | 1040 |
| 27 | 486 | 328 | 265 | 176 | 284 | 293 | 217 | 191 | 418 | 825 | 911 | 1080 |
| 28 | 468 | 354 | 266 | 181 | 276 | 281 | 219 | 200 | 281 | 813 | 902 | 1120 |
| 29 | 452 | 394 | 342 | 197 | 271 | 259 | 230 | 210 | 300 | 963 | 890 | 1070 |
| 30 | 366 | 328 | 304 | 200 | --- | 276 | 243 | 217 | 340 | 900 | 885 | 814 |
| 31 | 342 | --- | 265 | 192 | --- | 270 | --- | 230 | --- | 860 | 880 | --- |
| MEAN | 400 | 351 | 409 | 250 | 216 | 288 | 255 | 211 | 345 | 605 | 879 | 1060 |

## 08022040 SABINE RIVER NEAR BECKVILLE, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30.0 | 15.0 | 13.0 | 7.0 | 7.0 | 5.0 | 9.0 | 15.0 | | | 33.0 | --- |
| 2 | 30.0 | 15.0 | 12.0 | 7.0 | 7.0 | 5.0 | 9.0 | 15.0 | | | 33.0 | --- |
| 3 | 29.0 | 15.0 | 12.0 | 7.0 | 7.0 | 5.0 | 9.0 | 15.0 | | | --- | --- |
| 4 | 30.0 | 15.0 | 12.0 | 7.0 | 8.0 | 6.0 | 9.0 | --- | | | --- | --- |
| 5 | 30.0 | 15.0 | 13.0 | 7.0 | 8.0 | 6.0 | --- | --- | | | --- | --- |
| 6 | 30.0 | 14.0 | 13.0 | 8.0 | 8.0 | 6.0 | --- | --- | | | --- | --- |
| 7 | 30.0 | 14.0 | --- | 8.0 | 7.0 | 10.0 | --- | --- | | | --- | 32.0 |
| 8 | 30.0 | 13.0 | --- | 8.0 | 6.0 | 10.0 | --- | --- | | | 33.0 | --- |
| 9 | 30.0 | 13.0 | 14.0 | 8.0 | 5.0 | 10.0 | 9.0 | --- | | | 33.0 | 29.0 |
| 10 | 26.0 | 13.0 | 13.0 | 10.0 | 5.0 | 10.0 | 15.0 | --- | | | --- | --- |
| 11 | 21.0 | 13.0 | 13.0 | 10.0 | 7.0 | 9.0 | --- | --- | | | 33.0 | 33.0 |
| 12 | 22.0 | 13.0 | 12.0 | 8.0 | 7.0 | 9.0 | --- | --- | | | --- | 31.0 |
| 13 | 21.0 | 13.0 | 11.0 | 9.0 | 7.0 | 9.0 | --- | --- | | | --- | 27.0 |
| 14 | 21.0 | 13.0 | --- | 9.0 | 7.0 | 9.0 | --- | --- | | | 33.0 | 32.0 |
| 15 | 21.0 | 13.0 | 8.0 | 9.0 | --- | 9.0 | 15.0 | --- | | | --- | 32.0 |
| 16 | 21.0 | 13.0 | 9.0 | 9.0 | --- | 9.0 | 15.0 | --- | | | 33.0 | 32.0 |
| 17 | 21.0 | 14.0 | 8.0 | 9.0 | 5.0 | --- | 15.0 | --- | | | --- | 31.0 |
| 18 | 21.0 | 14.0 | 8.0 | 9.0 | --- | 9.0 | 15.0 | --- | | | --- | 31.0 |
| 19 | 21.0 | 14.0 | 9.0 | 9.0 | --- | 9.0 | 15.0 | --- | | | --- | 31.0 |
| 20 | --- | 14.0 | 10.0 | 12.0 | --- | 9.0 | --- | --- | | | 33.0 | 25.0 |
| 21 | --- | --- | 9.0 | 12.0 | --- | 9.0 | 18.0 | --- | | | 33.0 | 25.5 |
| 22 | 20.0 | 12.0 | 9.0 | 12.0 | 9.0 | 9.0 | --- | --- | | | --- | 30.0 |
| 23 | 20.0 | 12.0 | 9.0 | 12.0 | 9.0 | --- | 15.0 | --- | | | --- | 31.0 |
| 24 | 20.0 | 12.0 | --- | 12.0 | 10.0 | 9.0 | 15.0 | --- | | | --- | 31.0 |
| 25 | 21.0 | --- | --- | 12.0 | --- | 9.0 | 15.0 | --- | | | --- | 30.0 |
| 26 | 21.0 | 14.0 | --- | 12.0 | --- | 9.0 | 15.0 | --- | | | --- | 28.0 |
| 27 | 21.0 | 14.0 | --- | 10.0 | 10.0 | 9.0 | 15.0 | --- | | | --- | 24.0 |
| 28 | 21.0 | 12.0 | 3.0 | 9.0 | 10.0 | 9.0 | 15.0 | --- | | | --- | 23.0 |
| 29 | 19.0 | 13.0 | 5.0 | 7.0 | 10.0 | 9.0 | --- | --- | | | --- | 23.0 |
| 30 | 16.0 | 13.0 | 9.0 | 7.0 | --- | 9.0 | 15.0 | --- | | | --- | 23.0 |
| 31 | 15.0 | --- | --- | 7.0 | --- | 9.0 | --- | --- | | | --- | --- |
| MEAN | 23.5 | 13.5 | 10.0 | 9.0 | 7.5 | 8.5 | 13.5 | 15.0 | | | 33.0 | 29.0 |

## 08022060 MARTIN LAKE NEAR TATUM, TX

**LOCATION.**--Lat 32°15'42", long 94°34'23", Rusk County, Hydrologic Unit 12010002, on retaining wall, 30 ft (9 m) to right of intake to generating plant No. 1, 1.9 mi (3.1 km) upstream from Martin Dam on Martin Creek, 5.8 mi (9.3 km) southwest of Tatum, and 21.9 mi (35.2 km) upstream from mouth.

**DRAINAGE AREA.**--130 $mi^2$ (337 $km^2$).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--April 1974 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 15, 1976, nonrecording gage near left end of dam 1.9 mi (3.1 km) downstream at same datum.

**REMARKS.**--The lake is formed by a rolled earthfill dam 8,675 ft (2,644 m) long, including a 1,000-foot (305 m) uncontrolled emergency spillway. Deliberate impoundment began in April 1974. The uncontrolled emergency spillway is an excavated channel cut through natural ground and located at the left end of the dam. The controlled spillway is a concrete ogee design with four 14.0- by 40.0-foot-wide (4.3 by 12.2 m) tainter gates located near the left end of the dam. The low-flow outlet works consist of a 3.0- by 5.0-foot (0.9 by 1.5 m) conduit with a sluice gate located in one of the gate piers. In addition, there is an 8-inch (203 mm) pipe with sluice gate. The area and capacity tables are based on an aerial survey made in October 1971. There are no known diversions. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 321.5 | - |
| Crest of uncontrolled spillway | 312.0 | 111,500 |
| Top of gates | 308.0 | 87,960 |
| Top of conservation pool | 306.0 | 77,500 |
| Crest of gated spillway | 294.0 | 31,040 |
| Lowest gated outlet (invert) | 284.0 | 10,320 |

**COOPERATION.**--Area and capacity tables furnished by Forrest and Cotton, Consulting Engineers, for Texas Utilities Services, Inc.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 93,250 acre-ft (115 $hm^3$) Mar. 31, 1979, elevation, 308.95 ft (94.168 m); minimum since first appreciable storage, 62,990 acre-ft (77.7 $hm^3$) Sept. 29, 1980, elevation, 302.92 ft (92.330 m).

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 86,390 acre-ft (107 $hm^3$) Apr. 14 at 0100 hours, elevation, 307.71 ft (93.790 m); minimum, 62,990 acre-ft (77.7 $hm^3$) Sept. 29, elevation, 302.92 ft (92.330 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 302.0 | 59,020 | 306.0 | 77,470 |
| 304.0 | 67,880 | 308.0 | 87,970 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 76100 | 76550 | 78200 | 77550 | 77000 | 78200 | 78000 | 78100 | 78360 | 77150 | 72110 | 66730 |
| 2 | 75900 | 76550 | 78200 | 77250 | 77150 | 78510 | 78100 | 78660 | 78260 | 77000 | 71910 | 66590 |
| 3 | 75710 | 76500 | 78200 | 77400 | 77250 | 78610 | 78100 | 78200 | 78100 | 76850 | 71630 | 66500 |
| 4 | 75560 | 76450 | 78260 | 77450 | 77400 | 78610 | 78050 | 77800 | 78000 | 76650 | 71370 | 66320 |
| 5 | 75460 | 76450 | 78260 | 77500 | 77550 | 78660 | 78100 | 77850 | 77950 | 76450 | 71200 | 66050 |
| 6 | 75310 | 76350 | 78200 | 77600 | 77600 | 78710 | 78150 | 77850 | 77750 | 76300 | 71060 | 65870 |
| 7 | 75260 | 76300 | 78150 | 77550 | 77650 | 78860 | 78260 | 77900 | 77600 | 76100 | 70870 | 65770 |
| 8 | 75160 | 76300 | 78150 | 77600 | 79680 | 78960 | 78100 | 77800 | 77450 | 75900 | 70720 | 65770 |
| 9 | 74920 | 76400 | 78150 | 77600 | 81890 | 79020 | 78050 | 77750 | 77250 | 75710 | 70540 | 65730 |
| 10 | 74820 | 76300 | 78200 | 77600 | 81790 | 79120 | 78050 | 77750 | 77150 | 75560 | 70350 | 65590 |
| 11 | 74670 | 76250 | 78200 | 77700 | 81010 | 79170 | 80390 | 77750 | 77050 | 75360 | 70300 | 65500 |
| 12 | 74570 | 76200 | 78710 | 77750 | 79580 | 78810 | 82420 | 78610 | 76900 | 75160 | 70110 | 65370 |
| 13 | 74430 | 76100 | 78860 | 77800 | 78360 | 78100 | 86340 | 79120 | 76750 | 74970 | 69970 | 65190 |
| 14 | 74330 | 76100 | 78910 | 77900 | 77150 | 77450 | 84790 | 78610 | 76600 | 74770 | 69830 | 65050 |
| 15 | 74180 | 76050 | 78760 | 77950 | 76500 | 77100 | 81530 | 78610 | 76400 | 74570 | 69640 | 64960 |
| 16 | 74130 | 76050 | 77900 | 78150 | 76700 | 77400 | 78510 | 79020 | 76250 | 74330 | 69450 | 64780 |
| 17 | 74090 | 76050 | 77700 | 78260 | 76800 | 77300 | 77800 | 78810 | 76050 | 74180 | 69220 | 64610 |
| 18 | 74040 | 76050 | 77750 | 78360 | 77000 | 77400 | 77950 | 78710 | 75900 | 73990 | 69030 | 64470 |
| 19 | 73990 | 76100 | 77750 | 78360 | 77100 | 77500 | 78050 | 78760 | 75760 | 73790 | 68850 | 64290 |
| 20 | 73940 | 76150 | 77800 | 78560 | 77300 | 77550 | 78200 | 78810 | 76200 | 73600 | 68660 | 64160 |
| 21 | 73890 | 77250 | 78000 | 79370 | 77400 | 77650 | 78260 | 78810 | 78200 | 73550 | 68520 | 64030 |
| 22 | 74380 | 77950 | 79120 | 83620 | 77500 | 77700 | 78310 | 78810 | 78310 | 73410 | 68340 | 63850 |
| 23 | 74330 | 78200 | 80910 | 82360 | 77550 | 78000 | 78360 | 78810 | 78260 | 73210 | 68110 | 63710 |
| 24 | 74280 | 78260 | 80810 | 81840 | 77600 | 77500 | 78410 | 78810 | 78150 | 73070 | 67920 | 63630 |
| 25 | 74180 | 78360 | 80090 | 81070 | 77550 | 77600 | 79070 | 78810 | 78000 | 72870 | 67830 | 63490 |
| 26 | 74130 | 78410 | 78200 | 79930 | 77600 | 77750 | 79420 | 78810 | 77900 | 72540 | 67640 | 63320 |
| 27 | 74040 | 78360 | 78360 | 78860 | 77650 | 78360 | 78910 | 78760 | 77800 | 72870 | 67460 | 63140 |
| 28 | 74040 | 78260 | 78560 | 77800 | 77650 | 78860 | 78200 | 78710 | 77650 | 72780 | 67420 | 63050 |
| 29 | 73990 | 78150 | 78610 | 77050 | 78100 | 79020 | 78000 | 78610 | 77450 | 72590 | 67230 | 63140 |
| 30 | 75460 | 78200 | 78310 | 76550 | --- | 78560 | 78100 | 78510 | 77300 | 72440 | 67090 | 63050 |
| 31 | 76300 | --- | 77900 | 76850 | --- | 78150 | --- | 78460 | --- | 72300 | 66910 | --- |
| MAX | 76300 | 78410 | 80910 | 83620 | 81890 | 79170 | 86340 | 79120 | 78360 | 77150 | 72110 | 66730 |
| MIN | 73890 | 76050 | 77700 | 76550 | 76500 | 77100 | 77800 | 77750 | 75760 | 72300 | 66910 | 63050 |
| (†) | 305.76 | 306.14 | 306.08 | 305.87 | 306.12 | 306.13 | 306.12 | 306.19 | 305.96 | 304.94 | 303.79 | 302.93 |
| (‡) | +150 | +1900 | -300 | -1050 | +1250 | +50 | -50 | +360 | -1160 | -5000 | -5390 | -3860 |

CAL YR 1979 MAX 90190 MIN 71910 ‡ +4690
WTR YR 1980 MAX 86340 MIN 63050 ‡ -13100

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

## 08022060 MARTIN LAKE NEAR TATUM, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1974 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| FEB<br>14... | 1140 | 250 | 11.0 | 70 | 44 | 17 | 6.8 | 17 | .9 |
| JUL<br>30... | 1300 | 270 | 32.5 | 78 | 46 | 19 | 7.3 | 18 | .9 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| FEB<br>14... | 3.0 | 32 | 0 | 56 | 17 | .2 | 6.7 | 139 |
| JUL<br>30... | 3.4 | 38 | 0 | 57 | 23 | .2 | 6.9 | 154 |

## 08022070 MARTIN CREEK NEAR TATUM, TX

LOCATION.--Lat 32°17'44", long 94°29'29", Panola County, Hydrologic Unit 12010002, on right bank 35 ft (11 m) downstream from right abutment and 360 ft (110 m) to right of bridge on State Highway 149, 50 ft (15 m) upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 1.7 mi (2.7 km) upstream from Hogan Creek, 2.0 mi (3.2 km) southeast of Tatum, 5.0 mi (8.0 km) downstream from Martin Lake, and 15.0 mi (24.1 km) upstream from mouth.

DRAINAGE AREA.--148 mi$^2$ (383 km$^2$).

PERIOD OF RECORD.--April 1974 to current year.

REVISED RECORDS.--WDR TX-76-1: 1975.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 240.26 ft (73.231 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 31, 1978, at site 50 ft (15 m) upstream at same datum.

REMARKS.--Records good. Flow is largely regulated by Martin Lake located 5 mi (8 km) upstream. Several obvervations of water temperature were made during the year.

AVERAGE DISCHARGE.--6 years (water years 1975-80), 95.0 ft$^3$/s (2.690 m$^3$/s), 68,830 acre-ft/yr (84.9 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,540 ft$^3$/s (71.9 m$^3$/s) Apr. 30, 1976, gage height, 13.76 ft (4.194 m); minimum, 0.25 ft$^3$/s (0.007 m$^3$/s) Oct. 17, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1948, 18.15 ft (5.532 m) April 1969. The flood in April 1957 reached a stage of 13.95 ft (4.252 m), from information by State Department of Highways and Public Transporation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,950 ft$^3$/s (55.2 m$^3$/s) Apr. 13, gage height, 13.06 ft (3.981 m); minimum, 0.93 ft$^3$/s (0.026 m$^3$/s) Sept. 23.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.9 | 45 | 8.4 | 279 | 60 | 59 | 205 | 19 | 10 | 4.5 | 2.7 | 1.5 |
| 2 | 5.7 | 15 | 8.4 | 278 | 26 | 26 | 81 | 769 | 9.7 | 4.5 | 2.6 | 1.5 |
| 3 | 5.9 | 9.6 | 8.2 | 200 | 22 | 17 | 18 | 421 | 9.3 | 4.3 | 2.5 | 1.5 |
| 4 | 5.7 | 7.7 | 8.2 | 47 | 20 | 16 | 14 | 447 | 9.0 | 4.1 | 2.4 | 1.4 |
| 5 | 5.1 | 7.2 | 8.6 | 21 | 19 | 15 | 13 | 241 | 8.6 | 3.7 | 2.4 | 1.3 |
| 6 | 5.3 | 6.8 | 8.8 | 17 | 19 | 14 | 12 | 35 | 8.0 | 3.4 | 2.4 | 1.3 |
| 7 | 5.0 | 5.6 | 8.2 | 16 | 18 | 14 | 12 | 19 | 7.6 | 3.5 | 2.4 | 1.2 |
| 8 | 4.6 | 5.1 | 7.5 | 15 | 79 | 14 | 12 | 17 | 7.3 | 3.3 | 2.3 | 1.3 |
| 9 | 4.2 | 11 | 6.9 | 14 | 388 | 14 | 11 | 16 | 7.1 | 3.1 | 2.2 | 1.4 |
| 10 | 4.6 | 13 | 6.5 | 13 | 756 | 14 | 10 | 16 | 7.5 | 2.7 | 2.1 | 1.5 |
| 11 | 4.4 | 8.5 | 6.8 | 14 | 817 | 13 | 19 | 15 | 7.0 | 2.5 | 2.1 | 1.5 |
| 12 | 5.2 | 6.9 | 12 | 13 | 802 | 71 | 191 | 29 | 6.6 | 2.4 | 2.2 | 1.5 |
| 13 | 4.4 | 6.2 | 45 | 12 | 802 | 288 | 1690 | 89 | 6.5 | 2.3 | 2.2 | 1.4 |
| 14 | 4.4 | 5.5 | 24 | 12 | 798 | 322 | 1680 | 125 | 7.1 | 2.4 | 2.0 | 1.4 |
| 15 | 4.1 | 4.9 | 15 | 12 | 762 | 320 | 1780 | 641 | 6.0 | 2.7 | 1.9 | 1.4 |
| 16 | 4.2 | 4.5 | 130 | 15 | 246 | 150 | 1730 | 1030 | 5.6 | 2.8 | 2.0 | 1.4 |
| 17 | 5.1 | 4.9 | 390 | 16 | 29 | 26 | 1310 | 837 | 5.1 | 2.7 | 1.9 | 1.3 |
| 18 | 6.0 | 5.0 | 173 | 14 | 19 | 15 | 201 | 538 | 5.1 | 2.6 | 1.9 | 1.1 |
| 19 | 5.8 | 4.7 | 28 | 13 | 17 | 14 | 28 | 167 | 5.1 | 2.6 | 1.9 | 1.2 |
| 20 | 5.9 | 5.2 | 13 | 21 | 16 | 16 | 18 | 33 | 13 | 2.5 | 1.8 | 1.3 |
| 21 | 5.1 | 23 | 11 | 44 | 16 | 15 | 16 | 21 | 159 | 2.8 | 1.8 | 1.2 |
| 22 | 27 | 103 | 59 | 509 | 15 | 13 | 15 | 18 | 64 | 4.0 | 1.8 | 1.2 |
| 23 | 20 | 57 | 106 | 1460 | 14 | 17 | 14 | 16 | 17 | 2.7 | 1.7 | 1.0 |
| 24 | 11 | 26 | 769 | 1110 | 14 | 140 | 14 | 16 | 12 | 2.4 | 1.7 | 1.1 |
| 25 | 8.9 | 15 | 1590 | 634 | 13 | 207 | 26 | 16 | 9.0 | 2.3 | 1.6 | 1.2 |
| 26 | 7.4 | 12 | 699 | 650 | 13 | 30 | 38 | 15 | 7.7 | 2.2 | 1.5 | 1.4 |
| 27 | 6.9 | 11 | 819 | 635 | 13 | 20 | 129 | 14 | 7.0 | 2.5 | 1.5 | 1.5 |
| 28 | 6.9 | 9.3 | 99 | 630 | 13 | 44 | 347 | 13 | 6.1 | 11 | 1.5 | 1.5 |
| 29 | 6.3 | 8.6 | 44 | 634 | 13 | 26 | 367 | 12 | 5.8 | 4.2 | 1.8 | 1.7 |
| 30 | 14 | 8.4 | 172 | 647 | --- | 133 | 112 | 12 | 5.0 | 3.4 | 1.8 | 2.0 |
| 31 | 153 | --- | 274 | 396 | --- | 202 | --- | 11 | --- | 2.9 | 1.7 | --- |
| TOTAL | 368.0 | 455.6 | 5558.5 | 8391 | 5839 | 2285 | 10113 | 5668 | 443.8 | 103.0 | 62.3 | 41.2 |
| MEAN | 11.9 | 15.2 | 179 | 271 | 201 | 73.7 | 337 | 183 | 14.8 | 3.32 | 2.01 | 1.37 |
| MAX | 153 | 103 | 1590 | 1460 | 817 | 322 | 1780 | 1030 | 159 | 11 | 2.7 | 2.0 |
| MIN | 4.1 | 4.5 | 6.5 | 12 | 13 | 13 | 10 | 11 | 5.0 | 2.2 | 1.5 | 1.0 |
| AC-FT | 730 | 904 | 11030 | 16640 | 11580 | 4530 | 20060 | 11240 | 880 | 204 | 124 | 82 |

CAL YR 1979 TOTAL 48053.1 MEAN 132 MAX 2380 MIN 2.1 AC-FT 95310
WTR YR 1980 TOTAL 39328.4 MEAN 107 MAX 1780 MIN 1.0 AC-FT 78010

## 08022300 MURVAUL BAYOU NEAR GARY, TX

**LOCATION.**--Lat 32°02'54", long 94°22'31", Panola County, Hydrologic Unit 12010002, near center of main channel on downstream side of bridge on Farm Road 10, 0.3 mi (0.5 km) downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 1.0 mi (1.6 km) downstream from Indian Creek, 1.5 mi (2.4 km) north of Gary, and 3 mi (5 km) downstream from Murvaul Lake.

**DRAINAGE AREA.**--134 $mi^2$ (347 $km^2$).

**PERIOD OF RECORD.**--April 1958 to current year.

**REVISED RECORDS.**--WSP 1732: Drainage area.

**GAGE.**--Water-stage recorder. Datum of gage is 217.82 ft (66.392 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Records fair. Discharge largely regulated by Murvaul Lake 3 mi (5 km) upstream. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--22 years (water years 1959-80), 87.1 $ft^3/s$ (2.467 $m^3/s$), 63,100 acre-ft/yr (77.8 $hm^3/yr$).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 3,590 $ft^3/s$ (102 $m^3/s$) Mar. 18, 1969, gage height, 11.57 ft (3.527 m); no flow at times in 1967-80.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since at least 1928, about 14.5 ft (4.42 m) in July 1933, from information by local resident.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 2,810 $ft^3/s$ (79.6 $m^3/s$) Apr. 13 at 1200 hours, gage height, 11.35 ft (3.459 m); no flow for many days.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.3 | .00 | 58 | 111 | 397 | 29 | 100 | 47 | 14 | .06 | .00 | .00 |
| 2 | 3.3 | .00 | 48 | 85 | 314 | 35 | 81 | 71 | 9.6 | .06 | .00 | .00 |
| 3 | 1.1 | .06 | 39 | 77 | 239 | 25 | 75 | 94 | 6.8 | .03 | .00 | .00 |
| 4 | .65 | .09 | 35 | 71 | 182 | 23 | 66 | 71 | 5.2 | .02 | .00 | .00 |
| 5 | .37 | .08 | 31 | 58 | 145 | 27 | 52 | 56 | 3.9 | .02 | .00 | .00 |
| 6 | .14 | .08 | 30 | 50 | 125 | 23 | 43 | 46 | 2.7 | .02 | .00 | .00 |
| 7 | .07 | .07 | 26 | 48 | 96 | 22 | 38 | 36 | 1.8 | .01 | .00 | .00 |
| 8 | .05 | .06 | 22 | 41 | 224 | 25 | 42 | 28 | 1.5 | .12 | .00 | .00 |
| 9 | .03 | .06 | 20 | 35 | 1050 | 23 | 34 | 20 | 1.1 | .04 | .00 | .00 |
| 10 | .02 | .06 | 19 | 31 | 1280 | 22 | 22 | 14 | .68 | .02 | .00 | .00 |
| 11 | .00 | .05 | 18 | 35 | 1090 | 21 | 124 | 12 | .54 | .02 | .00 | .00 |
| 12 | .00 | .05 | 29 | 31 | 758 | 25 | 1680 | 15 | .48 | .01 | .00 | .00 |
| 13 | .00 | .05 | 109 | 26 | 524 | 39 | 2600 | 77 | .42 | .01 | .00 | .00 |
| 14 | .00 | .04 | 143 | 25 | 399 | 30 | 2170 | 143 | .31 | .00 | .00 | .00 |
| 15 | .00 | .03 | 133 | 23 | 297 | 22 | 1370 | 245 | .23 | .00 | .00 | .00 |
| 16 | .00 | .02 | 111 | 32 | 232 | 26 | 889 | 1850 | .26 | .00 | .00 | .00 |
| 17 | .00 | .01 | 91 | 73 | 170 | 43 | 580 | 1830 | .29 | .00 | .00 | .00 |
| 18 | .00 | .00 | 68 | 83 | 124 | 41 | 443 | 1290 | .15 | .00 | .00 | .00 |
| 19 | .00 | .00 | 57 | 77 | 103 | 29 | 329 | 840 | .12 | .00 | .00 | .00 |
| 20 | .00 | .00 | 50 | 78 | 90 | 50 | 223 | 564 | .14 | .00 | .00 | .00 |
| 21 | .00 | 146 | 46 | 148 | 80 | 69 | 191 | 446 | 120 | .00 | .00 | .00 |
| 22 | .00 | 441 | 49 | 872 | 69 | 42 | 106 | 370 | 39 | .00 | .00 | .00 |
| 23 | .00 | 461 | 126 | 1570 | 58 | 35 | 76 | 241 | 4.1 | .00 | .00 | .00 |
| 24 | .00 | 454 | 357 | 1310 | 51 | 61 | 58 | 154 | 1.1 | .00 | .00 | .00 |
| 25 | .00 | 369 | 518 | 956 | 50 | 54 | 90 | 109 | .54 | .00 | .00 | .00 |
| 26 | .00 | 264 | 496 | 626 | 39 | 47 | 164 | 81 | .36 | .00 | .00 | .00 |
| 27 | .00 | 187 | 383 | 454 | 29 | 67 | 145 | 59 | .28 | .00 | .00 | .00 |
| 28 | .00 | 145 | 269 | 333 | 27 | 178 | 104 | 44 | .23 | .00 | .00 | .00 |
| 29 | .00 | 109 | 203 | 267 | 23 | 190 | 78 | 35 | .16 | .00 | .00 | .00 |
| 30 | .00 | 75 | 177 | 387 | --- | 197 | 58 | 26 | .10 | .00 | .00 | .00 |
| 31 | .00 | --- | 149 | 432 | --- | 140 | --- | 19 | --- | .00 | .00 | --- |
| TOTAL | 10.03 | 2651.81 | 3910 | 8445 | 8265 | 1660 | 12031 | 8933 | 216.09 | .44 | .00 | .00 |
| MEAN | .32 | 88.4 | 126 | 272 | 285 | 53.5 | 401 | 288 | 7.20 | .014 | .000 | .000 |
| MAX | 4.3 | 461 | 518 | 1570 | 1280 | 197 | 2600 | 1850 | 120 | .12 | .00 | .00 |
| MIN | .00 | .00 | 18 | 23 | 23 | 21 | 22 | 12 | .10 | .00 | .00 | .00 |
| AC-FT | 20 | 5260 | 7760 | 16750 | 16390 | 3290 | 23860 | 17720 | 429 | .9 | .00 | .00 |

CAL YR 1979 TOTAL 63275.81 MEAN 173 MAX 2320 MIN .00 AC-FT 125500
WTR YR 1980 TOTAL 46122.37 MEAN 126 MAX 2600 MIN .00 AC-FT 91480

## 08022500 SABINE RIVER AT LOGANSPORT, LA

LOCATION.--Lat 31°58'20", long 94°00'22", De Soto Parish, Louisiana-Shelby County, Texas State line at Logansport, Hydrologic Unit 12010004, just upstream from bridge on U.S. Highway 84, 3 mi (5 km) upstream from Bayou Castor, 111 mi (179 km) upstream from Toledo Bend Dam, and at mile 267.1 (429.8 km).

DRAINAGE AREA.--4,842 mi² (12,541 km²).

PERIOD OF RECORD.--Gage-height record March 1968 to current year. Discharge record July 1903 to February 1968.

REVISED RECORDS.--WSP 1312: 1903-6 (monthly and annual means). WSP 1732: 1929(M), 1933(M).

GAGE.--Water-stage recorder. Datum of gage is 147.72 ft (45.025 m) National Geodetic Vertical Datum of 1929. July 1, 1903, to Sept. 30, 1956, nonrecording gage. Oct. 1, 1956, to Jan. 16, 1964, water-stage recorder 4,600 ft (1,400 m) upstream. Jan. 16, 1964, to Dec. 10, 1968, water-stage recorder 4,700 ft (1,430 m) upstream. All gages to present datum except prior to Dec. 31, 1906, when datum was 2.00 ft (0.610 m) lower.

REMARKS.--Station discontinued as daily streamflow station Mar. 1, 1968, due to backwater from storage in Toledo Bend Reservoir (station 08025350). Eight major reservoirs, with a combined capacity of 1,068,000 acre-ft (1.32 km³), largely regulated the flow. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08020000. Numerous diversions above station for oilfield operations, municipal, and industrial uses.

AVERAGE DISCHARGE.--64 years (water years 1904-67), 3,208 ft³/s (90.85 m³/s), 2,324,000 acre-ft/yr (2.87 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height (1968-80), 32.50 ft (9.906 m) Apr. 20, 1969; minimum since initial filling of Toledo Bend Reservoir in June 1968, 17.97 ft (5.477 m) Nov. 29, 1977. Maximum discharge (1903-67), 92,000 ft³/s (2,610 m³/s) Apr. 8, 1945, gage height, 44.07 ft (13.433 m), from floodmark; minimum, 16 ft³/s (0.453 m³/s) Sept. 26-28, Oct. 3, 4, 1939.

Maximum stage since at least 1884, that of Apr. 8, 1945.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1884 reached a stage of 39.4 ft (12.01 m), present site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 28.62 ft (8.723 m) Apr. 16; minimum, 19.37 ft (5.904 m) Sept. 29.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 21.38 | 21.17 | 21.73 | 21.93 | 24.39 | 22.31 | 24.20 | 24.45 | 24.70 | 23.48 | 22.20 | 20.85 |
| 2 | 21.22 | 21.22 | 21.63 | 21.89 | 24.27 | 22.85 | 24.28 | 24.44 | 24.57 | 23.40 | 22.20 | 20.87 |
| 3 | 21.26 | 21.25 | 21.58 | 21.55 | 24.12 | 23.09 | 24.11 | 24.66 | 24.37 | 23.40 | 22.15 | 20.82 |
| 4 | 21.22 | 21.34 | 21.52 | 21.59 | 24.10 | 22.80 | 23.98 | 24.85 | 24.29 | 23.34 | 22.09 | 20.82 |
| 5 | 21.24 | 21.25 | 21.55 | 21.53 | 23.97 | 22.42 | 24.02 | 25.00 | 24.34 | 23.29 | 21.95 | 20.72 |
| 6 | 21.15 | 21.20 | 21.36 | 21.61 | 23.88 | 22.48 | 24.06 | 25.15 | 24.30 | 23.28 | 21.82 | 20.76 |
| 7 | 21.19 | 21.14 | 21.28 | 21.17 | 23.92 | 22.33 | 23.99 | 25.19 | 24.20 | 23.20 | 21.73 | 20.73 |
| 8 | 20.87 | 21.13 | 21.20 | 21.13 | 23.91 | 22.12 | 23.54 | 24.85 | 24.04 | 23.15 | 21.73 | 20.58 |
| 9 | 20.77 | 21.16 | 21.12 | 21.10 | 24.40 | 22.09 | 23.53 | 24.73 | 23.99 | 23.11 | 21.82 | 20.62 |
| 10 | 20.65 | 21.17 | 21.13 | 21.17 | 25.10 | 21.95 | 23.72 | 24.69 | 23.98 | 23.02 | 21.71 | 20.57 |
| 11 | 20.62 | 21.19 | 21.17 | 20.86 | 25.57 | 21.95 | 26.05 | 24.60 | 23.96 | 22.97 | 21.69 | 20.61 |
| 12 | 20.80 | 21.20 | 21.33 | 21.02 | 25.90 | 21.90 | 27.03 | 24.63 | 23.94 | 22.96 | 21.50 | 20.58 |
| 13 | 20.92 | 21.28 | 21.45 | 20.98 | 26.19 | 21.87 | 27.29 | 24.47 | 23.93 | 22.97 | 21.64 | 20.70 |
| 14 | 21.03 | 21.22 | 21.55 | 21.02 | 26.21 | 21.97 | 27.81 | 24.62 | 23.98 | 22.90 | 21.85 | 20.58 |
| 15 | 20.98 | 21.23 | 21.57 | 21.06 | 26.01 | 22.19 | 28.38 | 25.22 | 24.04 | 22.86 | 21.88 | 20.52 |
| 16 | 20.94 | 21.25 | 21.21 | 21.05 | 25.55 | 22.13 | 28.59 | 26.20 | 23.88 | 22.74 | 21.73 | 20.67 |
| 17 | 20.85 | 21.27 | 21.32 | 21.03 | 25.27 | 21.83 | 28.40 | 26.97 | 23.85 | 22.76 | 21.61 | 20.57 |
| 18 | 20.77 | 21.36 | 21.35 | 21.13 | 25.03 | 22.21 | 27.90 | 28.07 | 23.80 | 22.93 | 21.44 | 20.32 |
| 19 | 20.70 | 21.32 | 21.27 | 21.16 | 24.75 | 22.26 | 27.37 | 28.25 | 23.67 | 22.66 | 21.37 | 20.48 |
| 20 | --- | 21.57 | 21.30 | 21.21 | 24.55 | 22.24 | 26.80 | 27.85 | 23.65 | 22.71 | 21.31 | 20.55 |
| 21 | --- | 22.01 | 21.29 | 21.33 | 24.27 | 22.63 | 26.21 | 27.36 | 23.72 | 22.57 | 21.21 | 20.55 |
| 22 | --- | 22.57 | 21.31 | 22.70 | 24.15 | 22.94 | 25.66 | 26.72 | 23.84 | 22.55 | 21.17 | 20.39 |
| 23 | --- | 22.89 | 21.52 | 23.05 | 23.95 | 22.87 | 25.25 | 26.12 | 23.86 | 22.39 | 21.10 | 20.30 |
| 24 | --- | 22.92 | 21.91 | 23.72 | 23.68 | 22.69 | 25.03 | 25.69 | 23.85 | 22.47 | 21.14 | 20.21 |
| 25 | --- | 22.77 | 22.34 | 24.10 | 23.46 | 22.84 | 24.84 | 25.24 | 23.70 | 22.41 | 21.17 | 20.07 |
| 26 | --- | 22.55 | 22.52 | 24.60 | 23.59 | 22.86 | 24.74 | 24.91 | 23.62 | 22.49 | 21.11 | 19.85 |
| 27 | --- | 22.06 | 22.63 | 24.94 | 23.43 | 22.98 | 24.67 | 24.70 | 23.64 | 22.45 | 21.00 | 19.66 |
| 28 | --- | 21.80 | 22.73 | 25.04 | 23.24 | 23.30 | 24.63 | 24.65 | 23.66 | 22.36 | 21.08 | 19.64 |
| 29 | 21.03 | 21.74 | 22.64 | 24.94 | 23.09 | 23.59 | 24.58 | 24.67 | 23.56 | 22.26 | 20.85 | 19.37 |
| 30 | 21.49 | 21.82 | 22.37 | 24.70 | --- | 23.97 | 24.56 | 24.59 | 23.53 | 22.24 | 20.99 | 19.54 |
| 31 | 21.14 | --- | 22.04 | 24.51 | --- | 24.18 | --- | 24.70 | --- | 22.18 | 20.96 | --- |
| MAX | --- | 22.92 | 22.73 | 25.04 | 26.21 | 24.18 | 28.59 | 28.25 | 24.70 | 23.48 | 22.20 | 20.87 |
| MIN | --- | 21.13 | 21.12 | 20.86 | 23.09 | 21.83 | 23.53 | 24.44 | 23.53 | 22.18 | 20.85 | 19.37 |

## 08023200 TENAHA CREEK NEAR SHELBYVILLE, TX

**LOCATION.**--Lat 31°45'56", long 94°05'02", Shelby County, Hydrologic Unit 12010004, near center of span at downstream side of bridge on State Highway 87, 0.5 mi (0.8 km) northwest of Shelbyville, 4.2 mi (6.8 km) downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, and 5.0 mi (8.0 km) upstream from Beauchamp Creek.

**DRAINAGE AREA.**--97.8 mi$^2$ (253.3 km$^2$).

**PERIOD OF RECORD.**--March 1952 to current year.

**REVISED RECORDS.**--WSP 1732: Drainage area.

**GAGE.**--Water-stage recorder. Prior to May 9, 1963, nonrecording gage at same site and datum. Datum of gage is 205.71 ft (62.700 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Records fair. Minor diversions for municipal supply by city of Center from Mill Creek, a tributary of Tenaha Creek which enters above gage, and from Sandy Creek, a tributary of Attoyac Bayou in the Neches River basin. Sewage effluent is returned to Prairie Creek, a tributary of Tenaha Creek that enters 1.0 mi (1.6 km) downstream from gage. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--28 years, 84.6 ft$^3$/s (2.396 m$^3$/s), 11.75 in/yr (298 mm/yr), 61,290 acre-ft/yr (75.6 hm$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 21,900 ft$^3$/s (620 m$^3$/s) Sept. 14, 1978, gage height, 14.79 ft (4.508 m); no flow at times.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since at least 1884, 15.0 ft (4.57 m) Nov. 23, 1940, from information by local residents.

**EXTREMES FOR CURRENT YEAR.**--Peak discharges above base of 1,000 ft$^3$/s (28.3 m$^3$/s) and maximum (*):

| Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nov. 22 | 2300 | 3,160 | 89.5 | 10.49 | 3.197 | Mar. 30 | 0200 | 2,690 | 76.2 | 10.36 | 3.158 |
| Jan. 22 | 2200 | 2,690 | 76.2 | 10.36 | 3.158 | Apr. 12 | 1400 | *10,700 | 303 | 12.77 | 3.892 |
| Feb. 9 | 2300 | 1,520 | 43.0 | 9.81 | 2.990 | May 16 | 1200 | 4,130 | 117 | 10.85 | 3.307 |
| Mar. 21 | 0600 | 1,060 | 30.0 | 9.46 | 2.883 | | | | | | |

Minimum discharge, 1.0 ft$^3$/s (0.028 m$^3$/s) Aug. 24, 28.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11 | 385 | 47 | 68 | 211 | 51 | 191 | 44 | 29 | 5.0 | 4.2 | 2.7 |
| 2 | 9.5 | 119 | 45 | 59 | 131 | 57 | 167 | 53 | 27 | 4.7 | 3.2 | 2.4 |
| 3 | 7.8 | 49 | 43 | 65 | 107 | 44 | 211 | 59 | 26 | 4.7 | 3.4 | 2.2 |
| 4 | 7.2 | 33 | 42 | 91 | 94 | 42 | 128 | 44 | 24 | 4.4 | 3.8 | 2.4 |
| 5 | 5.6 | 27 | 42 | 74 | 89 | 45 | 87 | 38 | 22 | 4.1 | 2.5 | 2.5 |
| 6 | 6.1 | 22 | 43 | 62 | 99 | 40 | 74 | 33 | 21 | 4.1 | 1.9 | 2.4 |
| 7 | 5.9 | 19 | 41 | 60 | 87 | 38 | 70 | 32 | 21 | 4.1 | 1.4 | 3.0 |
| 8 | 6.8 | 18 | 38 | 55 | 137 | 42 | 62 | 30 | 19 | 4.0 | 1.3 | 3.0 |
| 9 | 6.9 | 20 | 35 | 50 | 1060 | 41 | 50 | 29 | 19 | 3.8 | 1.4 | 2.3 |
| 10 | 4.7 | 22 | 34 | 48 | 1210 | 37 | 43 | 27 | 18 | 3.3 | 1.8 | 2.2 |
| 11 | 4.6 | 19 | 35 | 53 | 723 | 33 | 55 | 31 | 18 | 3.3 | 1.8 | 1.9 |
| 12 | 5.6 | 14 | 55 | 54 | 270 | 33 | 6280 | 29 | 16 | 3.2 | 1.5 | 2.2 |
| 13 | 5.6 | 13 | 287 | 45 | 142 | 41 | 3740 | 34 | 15 | 3.6 | 1.7 | 1.9 |
| 14 | 4.8 | 13 | 407 | 43 | 111 | 32 | 2300 | 55 | 15 | 3.4 | 1.7 | 2.0 |
| 15 | 4.8 | 13 | 293 | 42 | 94 | 27 | 917 | 131 | 14 | 2.3 | 1.6 | 2.5 |
| 16 | 4.9 | 13 | 108 | 42 | 88 | 144 | 293 | 3020 | 13 | 2.3 | 1.4 | 1.9 |
| 17 | 5.2 | 14 | 77 | 68 | 76 | 234 | 132 | 2520 | 13 | 1.9 | 1.6 | 1.7 |
| 18 | 5.6 | 15 | 61 | 86 | 69 | 139 | 117 | 1160 | 13 | 1.8 | 1.6 | 1.9 |
| 19 | 5.6 | 16 | 55 | 65 | 67 | 76 | 96 | 556 | 12 | 2.2 | 1.3 | 1.9 |
| 20 | 5.6 | 15 | 54 | 142 | 66 | 291 | 80 | 606 | 12 | 3.4 | 1.2 | 3.1 |
| 21 | 6.1 | 136 | 53 | 717 | 62 | 919 | 71 | 641 | 16 | 3.7 | 1.2 | 3.4 |
| 22 | 61 | 1560 | 56 | 1460 | 57 | 551 | 62 | 172 | 19 | 24 | 1.1 | 3.1 |
| 23 | 171 | 2170 | 98 | 2040 | 51 | 159 | 55 | 91 | 16 | 18 | 1.1 | 2.2 |
| 24 | 62 | 935 | 413 | 1110 | 48 | 280 | 51 | 71 | 16 | 7.6 | 1.0 | 1.7 |
| 25 | 24 | 300 | 307 | 363 | 44 | 296 | 74 | 60 | 12 | 4.9 | 1.3 | 1.8 |
| 26 | 14 | 107 | 136 | 163 | 38 | 127 | 192 | 53 | 8.8 | 4.6 | 1.2 | 1.9 |
| 27 | 11 | 79 | 88 | 136 | 37 | 185 | 99 | 46 | 7.8 | 4.4 | 1.1 | 1.8 |
| 28 | 10 | 66 | 73 | 109 | 39 | 957 | 63 | 41 | 6.9 | 6.2 | 1.0 | 2.2 |
| 29 | 9.6 | 56 | 71 | 120 | 40 | 1280 | 52 | 38 | 6.2 | 15 | 2.0 | 2.3 |
| 30 | 17 | 50 | 89 | 211 | --- | 1720 | 46 | 34 | 5.7 | 8.6 | 9.7 | 2.3 |
| 31 | 334 | --- | 83 | 312 | --- | 607 | --- | 32 | --- | 4.9 | 2.8 | --- |
| TOTAL | 843.5 | 6318 | 3309 | 8013 | 5347 | 8568 | 15858 | 9810 | 481.4 | 171.5 | 63.8 | 68.8 |
| MEAN | 27.2 | 211 | 107 | 258 | 184 | 276 | 529 | 316 | 16.0 | 5.53 | 2.06 | 2.29 |
| MAX | 334 | 2170 | 413 | 2040 | 1210 | 1720 | 6280 | 3020 | 29 | 24 | 9.7 | 3.4 |
| MIN | 4.6 | 13 | 34 | 42 | 37 | 27 | 43 | 27 | 5.7 | 1.8 | 1.0 | 1.7 |
| CFSM | .28 | 2.16 | 1.09 | 2.64 | 1.88 | 2.82 | 5.41 | 3.23 | .16 | .06 | .02 | .02 |
| IN. | .32 | 2.40 | 1.26 | 3.05 | 2.03 | 3.26 | 6.03 | 3.73 | .18 | .07 | .02 | .03 |
| AC-FT | 1670 | 12530 | 6560 | 15890 | 10610 | 16990 | 31450 | 19460 | 955 | 340 | 127 | 136 |

CAL YR 1979 TOTAL 72240.7 MEAN 198 MAX 4300 MIN 4.6 CFSM 2.03 IN 27.48 AC-FT 143300
WTR YR 1980 TOTAL 58852.0 MEAN 161 MAX 6280 MIN 1.0 CFSM 1.65 IN 22.39 AC-FT 116700

## 08025350 TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX

**LOCATION.**--Lat 31°10'25", long 93°33'57", Newton County, Hydrologic Unit 12010004, in powerhouse at right end of Toledo Bend Dam on Sabine River, 15 mi (24 km) northeast of Burkeville, and at mile 156.5 (251.8 km).

**DRAINAGE AREA.**--7,178 mi² (18,591 km²).

**PERIOD OF RECORD.**--October 1966 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Sabine River Authority). Prior to July 20, 1967, nonrecording gage at same site and datum. July 20, 1967, to June 30, 1973, recording gage at south end of spillway 1.6 mi (2.6 km) north of present site and at same datum.

**REMARKS.**--The reservoir is formed by a rolled earthfill dam. Closure of embankment completed and deliberate impoundment was begun Oct. 3, 1966. The reservoir is operated for hydro-electric power generation and water conservation. Releases during high inflow periods are controlled by eleven 40- by 28-foot (12 by 9 m) tainter gates. An 8.33- by 12-foot (2.54 by 4 m) gated conduit through the dam is used for low-flow releases. Two additional 20-inch-diameter (508 mm) conduits, which bypass the larger conduit, may also be used for low-flow releases. Water for turbines is admitted through four 16.75- by 29-foot (5.11 by 9 m) penstocks and controlled by vertically operated caterpillar-type gates. The capacity table is based on Geological Survey topographic maps. For statement regarding regulation by upstream reservoirs, see station 08020000. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam.................................................... | 185.0 | - |
| Design flood.................................................. | 175.3 | 5,102,000 |
| Top of gates.................................................. | 173.0 | 4,660,000 |
| Top of power drawdown storage................................. | 172.0 | 4,476,000 |
| Top of power head storage..................................... | 162.2 | 2,922,000 |
| Crest of spillway (controlled)................................ | 145.0 | 1,162,000 |
| Lowest gated outlet (invert).................................. | 100.0 | 4,090 |

**COOPERATION.**--Capacity table furnished by the Sabine River Authority.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 4,739,000 acre-ft (5.84 km³) Mar. 21, 1969, elevation, 173.42 ft (52.858 m); minimum since initial filling of reservoir in June 1968, 3,433,000 acre-ft (4.23 km³) Nov. 27, 1977, elevation, 165.74 ft (50.518 m).

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 4,642,000 acre-ft (5.72 km³) May 29, elevation, 172.90 ft (52.700 m); minimum, 3,711,000 acre-ft (4.58 km³) Sept. 28, 30, elevation, 167.52 ft (51.060 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 167.0 | 3,628,000 | 172.0 | 4,476,000 |
| 169.0 | 3,953,000 | 173.0 | 4,660,000 |
| 170.0 | 4,123,000 | | |

### CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3956000 | 3968000 | 4044000 | 3983000 | 4198000 | 4324000 | 4387000 | 4463000 | 4453000 | 4333000 | 4082000 | 3892000 |
| 2 | 3956000 | 3965000 | 4027000 | 3961000 | 4200000 | 4219000 | 4387000 | 4472000 | 4463000 | 4329000 | 4075000 | 3885000 |
| 3 | 3983000 | 3961000 | 4012000 | 3988000 | 4208000 | 4161000 | 4413000 | 4476000 | 4472000 | 4306000 | 4070000 | 3882000 |
| 4 | 3961000 | 3951000 | 3998000 | 3961000 | 4210000 | 4179000 | 4401000 | 4485000 | 4471000 | 4311000 | 4058000 | 3865000 |
| 5 | 3943000 | 3961000 | 3980000 | 3943000 | 4212000 | 4168000 | 4381000 | 4494000 | 4456000 | 4311000 | 4051000 | 3873000 |
| 6 | 3941000 | 3978000 | 3980000 | 3925000 | 4210000 | 4140000 | 4365000 | 4504000 | 4447000 | 4297000 | 4046000 | 3873000 |
| 7 | 3938000 | 3950000 | 3970000 | 3925000 | 4200000 | 4126000 | 4347000 | 4513000 | 4455000 | 4297000 | 4046000 | 3867000 |
| 8 | 3935000 | 3941000 | 3951000 | 3920000 | 4285000 | 4120000 | 4369000 | 4513000 | 4462000 | 4283000 | 4037000 | 3873000 |
| 9 | 3995000 | 4005000 | 3940000 | 3916000 | 4345000 | 4095000 | 4351000 | 4467000 | 4458000 | 4271000 | 4029000 | 3867000 |
| 10 | 3941000 | 3978000 | 3931000 | 3915000 | 4351000 | 4092000 | 4315000 | 4449000 | 4447000 | 4262000 | 4024000 | 3862000 |
| 11 | 3933000 | 3965000 | 3936000 | 3933000 | 4385000 | 4080000 | 4378000 | 4449000 | 4440000 | 4252000 | 4024000 | 3855000 |
| 12 | 3928000 | 3983000 | 4003000 | 3907000 | 4395000 | 4071000 | 4458000 | 4449000 | 4428000 | 4241000 | 4024000 | 3854000 |
| 13 | 3940000 | 3963000 | 4019000 | 3903000 | 4385000 | 4073000 | 4572000 | 4504000 | 4413000 | 4240000 | 4020000 | 3837000 |
| 14 | 3928000 | 3961000 | 4000000 | 3903000 | 4387000 | 4068000 | 4572000 | 4498000 | 4404000 | 4226000 | 3997000 | 3845000 |
| 15 | 3933000 | 3961000 | 3993000 | 3907000 | 4422000 | 4054000 | 4596000 | 4517000 | 4401000 | 4215000 | 3980000 | 3837000 |
| 16 | 3928000 | 3965000 | 4027000 | 3920000 | 4422000 | 4080000 | 4577000 | 4587000 | 4390000 | 4203000 | 3980000 | 3821000 |
| 17 | 3933000 | 3956000 | 3966000 | 3928000 | 4381000 | 4123000 | 4568000 | 4596000 | 4395000 | 4189000 | 3988000 | 3816000 |
| 18 | 3925000 | 3956000 | 3943000 | 3928000 | 4360000 | 4094000 | 4581000 | 4614000 | 4387000 | 4194000 | 3983000 | 3837000 |
| 19 | 3907000 | 3961000 | 3945000 | 3936000 | 4354000 | 4114000 | 4574000 | 4638000 | 4387000 | 4186000 | 3980000 | 3829000 |
| 20 | 3913000 | 3950000 | 3953000 | 3953000 | 4351000 | 4200000 | 4563000 | 4624000 | 4387000 | 4184000 | 3970000 | 3821000 |
| 21 | 3897000 | 4037000 | 3956000 | 3963000 | 4344000 | 4153000 | 4550000 | 4596000 | 4390000 | 4184000 | 3965000 | 3821000 |
| 22 | 3987000 | 4058000 | 3948000 | 4037000 | 4318000 | 4144000 | 4531000 | 4577000 | 4395000 | 4257000 | 3956000 | 3829000 |
| 23 | 3945000 | 4068000 | 3970000 | 4019000 | 4327000 | 4167000 | 4507000 | 4541000 | 4383000 | 4167000 | 3953000 | 3821000 |
| 24 | 3936000 | 4089000 | 3987000 | 4040000 | 4351000 | 4175000 | 4476000 | 4509000 | 4379000 | 4147000 | 3948000 | 3804000 |
| 25 | 3933000 | 4085000 | 3987000 | 4075000 | 4354000 | 4173000 | 4513000 | 4494000 | 4385000 | 4130000 | 3931000 | 3780000 |
| 26 | 3921000 | 4068000 | 3987000 | 4106000 | 4297000 | 4184000 | 4513000 | 4476000 | 4383000 | 4130000 | 3923000 | 3764000 |
| 27 | 3920000 | 4137000 | 3990000 | 4126000 | 4271000 | 4231000 | 4476000 | 4451000 | 4363000 | 4130000 | 3920000 | 3719000 |
| 28 | 3930000 | 4133000 | 3992000 | 4140000 | 4260000 | 4260000 | 4455000 | 4449000 | 4336000 | 4133000 | 3907000 | 3722000 |
| 29 | 3916000 | 4078000 | 4000000 | 4158000 | 4264000 | 4329000 | 4440000 | 4440000 | 4351000 | 4125000 | 3902000 | 3721000 |
| 30 | 3965000 | 4056000 | 4003000 | 4226000 | --- | 4351000 | 4440000 | 4453000 | 4342000 | 4111000 | 3893000 | 3711000 |
| 31 | 3968000 | --- | 3993000 | 4215000 | --- | 4369000 | --- | 4449000 | --- | 4102000 | 3892000 | --- |
| MAX | 3995000 | 4137000 | 4044000 | 4226000 | 4422000 | 4369000 | 4596000 | 4638000 | 4472000 | 4333000 | 4082000 | 3892000 |
| MIN | 3897000 | 3941000 | 3931000 | 3903000 | 4198000 | 4054000 | 4315000 | 4440000 | 4336000 | 4102000 | 3892000 | 3711000 |
| (†) | 169.09 | 169.61 | 169.24 | 170.53 | 170.81 | 171.40 | 171.80 | 171.85 | 171.25 | 169.88 | 169.83 | 167.52 |
| (‡) | +13000 | +88000 | -63000 | +222000 | +49000 | +105000 | +71000 | +9000 | -107000 | -240000 | -210000 | -181000 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CAL YR | 1979 | MAX | 463800 | MIN | 389700 | ‡ | -72000 |
| WTR YR | 1980 | MAX | 463800 | MIN | 371100 | ‡ | -244000 |

† Elevation, in acre-feet, at end of month.
‡ Change in contents, in acre-feet.

## 08025360 SABINE RIVER AT TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX

LOCATION.--Lat 31°10'25", long 93°33'57", Newton County, Hydrologic Unit 12010005, in powerhouse at right end of Toledo Bend Dam, 10 mi (16 km) upstream from Sabine River near Burkeville gage, and at mile 156.5 (251.8 km).

DRAINAGE AREA.--7,178 mi² (18,591 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorders. Datum of gages is National Geodetic Vertical Datum of 1929 (levels by Sabine River Authority).

REMARKS.--Water-discharge records fair. Low flows are based on operation logs and discharge measurements and include tainter gate releases, turbine leakage, and low-flow sluiceway discharges. Discharges during turbine release periods are based on scroll case differential pressure-discharge relationships. Discharges above 16,000 ft³/s (453 m³/s) usually include tainter gate releases, which are computed using tainter gate rating.

AVERAGE DISCHARGE.--9 years, 6,021 ft³/s (170.5 m³/s), 4,362,000 acre-ft/yr (5.38 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 67,000 ft³/s (1,900 m³/s) Jan. 28, 1974; minimum daily, 30 ft³/s (0.85 m³/s) estimated Oct. 1-4, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 35,400 ft³/s (1,000 m³/s) May 19; minimum daily, 107 ft³/s (3.03 m³/s) for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 108 | 144 | 7120 | 9040 | 9060 | 10300 | 7370 | 2520 | 194 | 3440 | 3630 | 194 |
| 2 | 107 | 144 | 7010 | 9020 | 9000 | 14600 | 9720 | 2610 | 3590 | 3430 | 194 | 2570 |
| 3 | 107 | 144 | 7030 | 8420 | 9100 | 14900 | 7460 | 194 | 3600 | 3500 | 257 | 2120 |
| 4 | 107 | 144 | 6540 | 8160 | 5060 | 13400 | 11800 | 194 | 3850 | 194 | 4040 | 2090 |
| 5 | 107 | 144 | 6990 | 9380 | 7030 | 10900 | 11700 | 2500 | 3700 | 194 | 5760 | 194 |
| 6 | 107 | 144 | 5060 | 8770 | 9960 | 11100 | 10700 | 2800 | 3590 | 194 | 2450 | 194 |
| 7 | 107 | 144 | 7070 | 8710 | 9460 | 11100 | 6860 | 8130 | 194 | 3430 | 2180 | 194 |
| 8 | 107 | 144 | 7120 | 4770 | 6910 | 11000 | 6880 | 14000 | 194 | 3720 | 2280 | 3340 |
| 9 | 107 | 144 | 7100 | 4160 | 4360 | 10900 | 6830 | 14500 | 3330 | 3550 | 194 | 194 |
| 10 | 107 | 144 | 3050 | 3780 | 3450 | 9360 | 6800 | 7360 | 3370 | 3560 | 194 | 194 |
| 11 | 107 | 144 | 169 | 4090 | 4760 | 5630 | 5080 | 566 | 3410 | 3730 | 194 | 194 |
| 12 | 107 | 144 | 169 | 4380 | 9380 | 2720 | 9570 | 2630 | 3370 | 194 | 194 | 995 |
| 13 | 107 | 144 | 4500 | 3820 | 16500 | 2590 | 20100 | 2630 | 3370 | 194 | 194 | 194 |
| 14 | 107 | 144 | 7140 | 194 | 17300 | 1070 | 29200 | 7870 | 194 | 3760 | 1440 | 194 |
| 15 | 107 | 144 | 7220 | 194 | 16000 | 194 | 29800 | 14200 | 169 | 3610 | 4140 | 1760 |
| 16 | 107 | 144 | 7220 | 194 | 14700 | 194 | 29700 | 21600 | 3810 | 3500 | 194 | 194 |
| 17 | 107 | 144 | 11000 | 194 | 14500 | 1340 | 29700 | 32900 | 150 | 3520 | 194 | 1360 |
| 18 | 107 | 144 | 10600 | 194 | 14400 | 2730 | 29300 | 35000 | 1510 | 3580 | 2840 | 194 |
| 19 | 107 | 144 | 3190 | 194 | 14500 | 2670 | 19700 | 35400 | 6000 | 194 | 2650 | 1360 |
| 20 | 107 | 144 | 169 | 194 | 14500 | 2820 | 18500 | 35200 | 3400 | 194 | 2840 | 194 |
| 21 | 107 | 144 | 3620 | 194 | 14500 | 5130 | 18400 | 35300 | 194 | 3560 | 2510 | 194 |
| 22 | 107 | 144 | 3750 | 7340 | 14400 | 5030 | 18900 | 35200 | 2640 | 3710 | 2720 | 3500 |
| 23 | 107 | 2270 | 3510 | 4210 | 14400 | 5040 | 21200 | 31400 | 3380 | 3600 | 194 | 7230 |
| 24 | 107 | 3730 | 3890 | 3960 | 14600 | 7200 | 20900 | 25400 | 3360 | 3640 | 194 | 7250 |
| 25 | 1340 | 3700 | 3550 | 3850 | 13500 | 7320 | 19600 | 21800 | 3530 | 3640 | 2720 | 6630 |
| 26 | 140 | 4780 | 6640 | 3750 | 11100 | 7420 | 21700 | 21700 | 3250 | 194 | 2710 | 10400 |
| 27 | 107 | 7080 | 7610 | 4320 | 9630 | 6820 | 22100 | 14900 | 3440 | 194 | 2850 | 14200 |
| 28 | 107 | 7140 | 7360 | 7590 | 7190 | 7590 | 19200 | 3430 | 3560 | 3600 | 1440 | 194 |
| 29 | 120 | 7070 | 7590 | 7750 | 7400 | 7790 | 13800 | 3530 | 194 | 3600 | 4060 | 5460 |
| 30 | 144 | 7160 | 7470 | 7820 | --- | 7730 | 194 | 3470 | 3520 | 3560 | 194 | 180 |
| 31 | 144 | --- | 7290 | 9210 | --- | 7430 | --- | 194 | --- | 3400 | 194 | --- |
| TOTAL | 4671 | 46098 | 177747 | 147852 | 316650 | 214018 | 482764 | 439128 | 78063 | 80336 | 55845 | 73161 |
| MEAN | 151 | 1537 | 5734 | 4769 | 10920 | 6904 | 16090 | 14170 | 2602 | 2591 | 1801 | 2439 |
| MAX | 1340 | 7160 | 11000 | 9380 | 17300 | 14900 | 29800 | 35400 | 6000 | 3760 | 5760 | 14200 |
| MIN | 107 | 144 | 169 | 194 | 3450 | 194 | 194 | 194 | 150 | 194 | 194 | 180 |
| AC-FT | 9260 | 91440 | 352600 | 293300 | 628100 | 424500 | 957600 | 871000 | 154800 | 159300 | 110800 | 145100 |

CAL YR 1979 TOTAL 3294755 MEAN 9027 MAX 28900 MIN 58 AC-FT 6535000
WTR YR 1980 TOTAL 2116333 MEAN 5782 MAX 35400 MIN 107 AC-FT 4198000

## 08025360 SABINE RIVER AT TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 24... | 0945 | 300 | 7.1 | 19.0 | 7.7 | 82 | 2.3 | 18 | 0 | 5.1 |
| JAN 17... | 0940 | 156 | 6.6 | 12.0 | 10.6 | 97 | .8 | 33 | 10 | 8.0 |
| FEB 28... | 0900 | 170 | 7.5 | 10.0 | 13.8 | 121 | 1.0 | 32 | 10 | 7.9 |
| MAY 01... | 0930 | 148 | 7.0 | 15.5 | 7.6 | 76 | .9 | 32 | 10 | 7.9 |
| JUN 27... | 1045 | 164 | 6.8 | 25.0 | 6.5 | 77 | .1 | 33 | 18 | 8.2 |
| AUG 28... | 1010 | 178 | 6.4 | 19.0 | 5.3 | 56 | .5 | 32 | 8 | 8.1 |

| DATE | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 24... | 1.2 | 52 | 5.4 | 3.4 | 100 | 0 | 19 | 23 | .3 |
| JAN 17... | 3.2 | 16 | 1.2 | 2.9 | 28 | 0 | 16 | 19 | .1 |
| FEB 28... | 2.9 | 15 | 1.2 | 2.5 | 27 | 0 | 16 | 18 | .1 |
| MAY 01... | 3.0 | 14 | 1.1 | 3.2 | 27 | 0 | 15 | 18 | .2 |
| JUN 27... | 3.0 | 16 | 1.2 | 3.2 | 18 | 0 | 20 | 24 | .1 |
| AUG 28... | 2.9 | 18 | 1.4 | 3.0 | 29 | 0 | 21 | 26 | .1 |

| DATE | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NITRATE TOTAL (MG/L AS N) | NITROGEN, NITRITE TOTAL (MG/L AS N) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA TOTAL (MG/L AS N) | NITROGEN, ORGANIC TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 24... | 50 | 203 | .02 | .00 | .02 | .15 | .52 | .67 | .320 |
| JAN 17... | 6.8 | 86 | .06 | .01 | .07 | .02 | .41 | .43 | .030 |
| FEB 28... | 5.7 | 81 | .17 | .01 | .18 | .00 | .39 | .39 | .000 |
| MAY 01... | 7.4 | 82 | .13 | .00 | .13 | .08 | .56 | .64 | .030 |
| JUN 27... | 6.7 | 90 | .08 | .00 | .08 | .04 | .75 | .79 | .010 |
| AUG 28... | 8.8 | 102 | .00 | .01 | .00 | .37 | .12 | .49 | .040 |

## 08026000 SABINE RIVER NEAR BURKEVILLE, TX

LOCATION.--Lat 31°03'50", long 93°31'10", Newton County, Texas-Vernon Parish, Lousiana State line, Hydrologic Unit 12010005, near left edge of low-water channel at downstream side of bridge on State Highway 63, about 200 ft (61 m) downstream from Pearl Creek, 10 mi (16 km) northeast of Burkeville, 16 mi (26 km) downstream from Bayou Toro, and at mile 139.7 (224.8 km).

DRAINAGE AREA.--7,482 $mi^2$ (19,378 $km^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1955 to current year. Published as "below Toledo Bend near Burkeville" for period 1955-75.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 70.59 ft (21.516 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 23, 1958, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records fair. Flow regulated by Toledo Bend Reservoir (station 08025350) 16.8 mi (27.0 km) upstream, capacity 4,660,000 acre-ft (5.75 $km^3$).

AVERAGE DISCHARGE.--11 years (water years 1956-66) prior to completion of Toledo Bend Reservoir, 4,653 $ft^3/s$ (131.8 $m^3/s$), 3,371,000 acre-ft/yr (4.16 $km^3/yr$); 14 years (water years 1967-80) regulated, 5,272 $ft^3/s$ (149.3 $m^3/s$), 3,820,000 acre-ft/yr (4.71 $km^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,600 $ft^3/s$ (2,280 $m^3/s$) Jan. 29, 1974, gage height, 34.20 ft (10.424 m); minimum daily, 38 $ft^3/s$ (1.08 $m^3/s$) Sept. 14, 15, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860, 35.9 ft (10.94 m) in May 1884, from information by local resident. Flood of Apr. 15, 1945, reached a stage of 35.8 ft (10.91 m), and flood of May 23, 1953, reached a stage of 35.3 ft (10.76 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35,600 $ft^3/s$ (1,010 $m^3/s$) May 20, gage height, 28.25 ft (8.611 m); minimum daily, 136 $ft^3/s$ (3.85 $m^3/s$) Oct. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3760 | 559 | 7010 | 8440 | 9800 | 8420 | 9620 | 1480 | 749 | 3780 | 3710 | 265 |
| 2 | 329 | 527 | 6950 | 9440 | 9310 | 13900 | 8480 | 2970 | 3000 | 3720 | 1930 | 844 |
| 3 | 202 | 356 | 6950 | 9180 | 9030 | 14500 | 8360 | 2510 | 4000 | 3770 | 427 | 2440 |
| 4 | 188 | 279 | 6650 | 9450 | 6510 | 14400 | 10700 | 673 | 4000 | 1780 | 2370 | 2040 |
| 5 | 177 | 254 | 6790 | 9550 | 6560 | 10900 | 11100 | 1350 | 4200 | 430 | 4710 | 1470 |
| 6 | 173 | 243 | 5900 | 9320 | 7320 | 10500 | 12200 | 3000 | 4000 | 389 | 3510 | 293 |
| 7 | 155 | 233 | 6380 | 9380 | 10800 | 10600 | 7390 | 6000 | 2000 | 2430 | 2240 | 254 |
| 8 | 154 | 229 | 7050 | 6800 | 7310 | 10500 | 6760 | 12900 | 600 | 3480 | 2210 | 1640 |
| 9 | 156 | 272 | 7030 | 5000 | 10300 | 10400 | 6680 | 14100 | 2500 | 4110 | 1500 | 1880 |
| 10 | 150 | 385 | 5150 | 4200 | 8170 | 10100 | 6650 | 10500 | 3700 | 3780 | 353 | 292 |
| 11 | 147 | 299 | 748 | 4500 | 6840 | 5360 | 6420 | 2990 | 3700 | 3760 | 311 | 242 |
| 12 | 146 | 261 | 587 | 4500 | 9220 | 5100 | 9020 | 1610 | 3700 | 1740 | 297 | 463 |
| 13 | 146 | 252 | 4490 | 4000 | 14900 | 2360 | 17000 | 2950 | 3700 | 394 | 293 | 709 |
| 14 | 141 | 241 | 8480 | 2000 | 16900 | 2400 | 25600 | 5050 | 2500 | 2350 | 751 | 232 |
| 15 | 143 | 233 | 8430 | 800 | 16500 | 1150 | 28000 | 13100 | 500 | 3950 | 2760 | 615 |
| 16 | 136 | 231 | 7670 | 500 | 14900 | 576 | 28500 | 18300 | 3000 | 3750 | 2110 | 1390 |
| 17 | 141 | 226 | 8790 | 409 | 14400 | 1470 | 28500 | 28000 | 1500 | 3750 | 351 | 583 |
| 18 | 148 | 228 | 12300 | 389 | 14300 | 2410 | 28500 | 31800 | 1000 | 3750 | 1340 | 1020 |
| 19 | 148 | 227 | 5930 | 376 | 14300 | 3000 | 24600 | 33700 | 5500 | 1720 | 2740 | 613 |
| 20 | 148 | 224 | 890 | 363 | 14300 | 3440 | 19500 | 35300 | 4000 | 393 | 2710 | 1020 |
| 21 | 132 | 234 | 2310 | 357 | 14300 | 5740 | 17700 | 35300 | 2000 | 2470 | 2740 | 230 |
| 22 | 210 | 1160 | 4200 | 4710 | 14300 | 5730 | 17800 | 35000 | 2000 | 3800 | 2720 | 1000 |
| 23 | 273 | 2690 | 4100 | 7050 | 14200 | 5500 | 19300 | 34000 | 3000 | 3850 | 1530 | 6470 |
| 24 | 209 | 4270 | 5100 | 5100 | 14300 | 7250 | 20900 | 30800 | 3800 | 3790 | 303 | 7020 |
| 25 | 1020 | 4100 | 4810 | 4430 | 14300 | 7420 | 20500 | 26000 | 3800 | 3820 | 1410 | 6200 |
| 26 | 651 | 3930 | 5980 | 4180 | 11100 | 7500 | 23000 | 23300 | 3800 | 1780 | 2660 | 7470 |
| 27 | 243 | 6720 | 7840 | 4180 | 10300 | 7620 | 23400 | 20700 | 3750 | 408 | 2690 | 14200 |
| 28 | 205 | 6920 | 7930 | 6760 | 7450 | 12400 | 22200 | 7550 | 3820 | 2560 | 2010 | 5520 |
| 29 | 184 | 6910 | 7890 | 7610 | 7630 | 11200 | 17600 | 5000 | 1790 | 3800 | 2700 | 3690 |
| 30 | 202 | 6930 | 7820 | 7710 | --- | 12300 | 5270 | 4560 | 2480 | 3760 | 2030 | 2180 |
| 31 | 622 | --- | 7830 | 8530 | --- | 11200 | --- | 2480 | --- | 3600 | 326 | --- |
| TOTAL | 10839 | 49623 | 189985 | 159214 | 329550 | 235346 | 491250 | 452973 | 88089 | 86864 | 57742 | 72285 |
| MEAN | 350 | 1654 | 6129 | 5136 | 11360 | 7592 | 16380 | 14610 | 2936 | 2802 | 1863 | 2410 |
| MAX | 3760 | 6930 | 12300 | 9550 | 16900 | 14500 | 28500 | 35300 | 5500 | 4110 | 4710 | 14200 |
| MIN | 132 | 224 | 587 | 357 | 6510 | 576 | 5270 | 673 | 500 | 389 | 293 | 230 |
| AC-FT | 21500 | 98430 | 376800 | 315800 | 653700 | 466800 | 974400 | 898500 | 174700 | 172300 | 114500 | 143400 |

CAL YR 1979 TOTAL 3582795 MEAN 9816 MAX 29100 MIN 132 AC-FT 7106000
WTR YR 1980 TOTAL 2223760 MEAN 6076 MAX 35300 MIN 132 AC-FT 4411000

## 08026000 SABINE RIVER NEAR BURKEVILLE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: May 1968 to current year. Pesticide analyses: October 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1968 to current year.
WATER TEMPERATURES: May 1968 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 352 micromhos Mar. 15, 16, 1973; minimum, 31 micromhos Dec. 7, 1975, Jan. 24, Feb. 1, 1978.
WATER TEMPERATURES: Maximum, 32.0°C Aug. 20, 1975; minimum, 4.5°C Feb. 1, 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 227 micromhos Mar. 19; minimum daily, 58 micromhos Mar. 28.
WATER TEMPERATURES: Maximum daily, 30.5°C Aug. 12; minimum daily, 8.0°C Feb. 2, 9.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 24... | 1135 | 194 | 109 | 6.8 | 19.0 | 60 | 16 | 8.2 | 86 | 2.2 | 21 | 5 |
| JAN 17... | 1410 | 406 | 138 | 6.9 | 15.0 | 40 | 5.8 | 10.6 | 104 | .9 | 29 | 9 |
| FEB 27... | 1050 | 9480 | 141 | 7.2 | 10.0 | 10 | 3.1 | 11.8 | 103 | 1.1 | 31 | 11 |
| MAY 01... | 1235 | 912 | 130 | 6.7 | 18.5 | 40 | 28 | 7.8 | 82 | 1.2 | 28 | 5 |
| JUN 26... | 1645 | 4780 | 164 | 6.9 | 26.0 | 10 | 2.3 | 6.7 | 81 | .0 | 32 | 14 |
| AUG 28... | 1315 | 1080 | 160 | 6.7 | 27.0 | 10 | 32 | 6.6 | 81 | .8 | 31 | 15 |

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 24... | 5.2 | 2.0 | 12 | 1.1 | 2.8 | 20 | 0 | 12 | 14 | .1 | 13 |
| JAN 17... | 7.3 | 2.7 | 14 | 1.1 | 2.4 | 25 | 0 | 16 | 16 | .0 | 5 |
| FEB 27... | 7.7 | 2.8 | 15 | 1.2 | 2.5 | 24 | 0 | 16 | 18 | .1 | 6.4 |
| MAY 01... | 6.9 | 2.6 | 13 | 1.1 | 2.5 | 28 | 0 | 15 | 15 | .1 | 12 |
| JUN 26... | 7.8 | 3.0 | 16 | 1.2 | 2.9 | 22 | 0 | 19 | 23 | .1 | 6.9 |
| AUG 28... | 7.8 | 2.9 | 16 | 1.2 | 2.8 | 20 | 0 | 20 | 25 | .1 | 7.5 |

| DATE | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) | SOLIDS, VOLA-TILE, SUS-PENDED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 24... | 71 | 19 | 0 | .01 | .020 | .03 | .010 | .60 | .61 | .040 | 12 |
| JAN 17... | 86 | 2 | 2 | .12 | .010 | .13 | .060 | .41 | .47 | .040 | 6.0 |
| FEB 27... | 80 | 0 | 0 | .15 | .020 | .17 | .000 | .48 | .48 | .010 | 6.4 |
| MAY 01... | 81 | 34 | 13 | .08 | .000 | .08 | .170 | .77 | .94 | .060 | 7.0 |
| JUN 26... | 90 | 0 | 0 | .00 | .000 | .00 | .050 | .95 | 1.0 | .020 | 7.1 |
| AUG 28... | 92 | 0 | 5 | .00 | .000 | .00 | .380 | .02 | .40 | .030 | 5.2 |

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| MAY | | | | | | | |
| 01... | 1235 | 1 | 70 | <1 | 0 | 3 | 80 |

| DATE | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY DIS-SOLVED (UG/L AS HG) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| MAY | | | | | | |
| 01... | 55 | 140 | .6 | 0 | 0 | <3 |

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 10839 | 140 | 78 | 2290 | 19 | 570 | 14 | 401 | 30 |
| NOV. | 1979 | 49623 | 141 | 78 | 10500 | 20 | 2620 | 14 | 1830 | 30 |
| DEC. | 1979 | 189985 | 143 | 80 | 41000 | 20 | 10200 | 14 | 7130 | 30 |
| JAN. | 1980 | 159214 | 147 | 82 | 35100 | 20 | 8800 | 14 | 6080 | 31 |
| FEB. | 1980 | 329550 | 138 | 77 | 68600 | 19 | 17000 | 14 | 12100 | 29 |
| MAR. | 1980 | 235346 | 136 | 76 | 48400 | 19 | 12000 | 13 | 8470 | 29 |
| APR. | 1980 | 491250 | 143 | 80 | 106000 | 20 | 26400 | 14 | 18500 | 30 |
| MAY | 1980 | 452973 | 154 | 85 | 104000 | 22 | 26400 | 15 | 17800 | 33 |
| JUNE | 1980 | 88089 | 157 | 87 | 20600 | 22 | 5260 | 15 | 3510 | 33 |
| JULY | 1980 | 86864 | 162 | 89 | 20900 | 23 | 5370 | 15 | 3530 | 35 |
| AUG. | 1980 | 57742 | 161 | 88 | 13800 | 23 | 3520 | 15 | 2330 | 34 |
| SEPT | 1980 | 72285 | 162 | 89 | 17400 | 23 | 4440 | 15 | 2930 | 34 |
| TOTAL | | 2223760 | ** | ** | 489000 | ** | 123000 | ** | 84600 | ** |
| WTD. AVG. | | 6076 | 146 | 81 | ** | 20 | ** | 14 | ** | 31 |

## 08026000 SABINE RIVER NEAR BURKEVILLE, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 147 | 98 | 151 | 152 | 96 | 123 | 143 | 126 | 125 | 159 | 158 | 152 |
| 2 | 145 | 112 | 152 | 153 | 110 | 143 | 140 | 149 | 121 | 164 | 157 | 155 |
| 3 | 140 | 113 | 152 | 152 | 148 | 144 | 129 | 148 | 158 | 161 | 163 | 162 |
| 4 | 133 | 120 | 155 | 152 | 149 | 144 | 141 | 121 | 162 | 162 | 159 | 163 |
| 5 | 132 | 127 | 152 | 151 | 148 | 142 | 139 | 115 | 167 | 157 | 165 | 151 |
| 6 | 133 | 140 | 150 | 152 | 145 | 144 | 143 | 153 | 156 | 150 | 154 | 157 |
| 7 | 133 | 145 | 152 | 152 | 146 | 144 | 139 | 160 | 156 | 147 | 162 | 157 |
| 8 | 134 | 148 | 151 | 151 | 120 | 142 | 141 | 159 | 150 | 166 | 163 | 160 |
| 9 | 133 | 150 | 152 | 153 | 95 | 141 | 143 | 163 | 155 | 165 | 163 | 156 |
| 10 | 152 | 148 | 148 | 153 | 104 | 143 | 151 | 156 | 164 | 167 | 157 | 151 |
| 11 | 140 | 117 | 139 | 150 | 114 | 128 | 140 | 141 | 163 | 168 | 153 | 159 |
| 12 | 139 | 125 | 98 | 151 | 143 | 199 | 128 | 138 | 165 | 174 | 146 | 151 |
| 13 | 137 | 117 | 110 | 145 | 145 | 146 | 138 | 144 | 157 | 177 | 145 | 161 |
| 14 | 138 | 125 | 125 | 142 | 145 | 141 | 143 | 143 | 158 | 170 | 145 | 151 |
| 15 | 137 | 135 | 134 | 136 | 145 | 141 | 141 | 159 | 165 | 160 | 165 | 153 |
| 16 | 139 | 148 | 140 | 134 | 141 | 136 | 146 | 146 | 167 | 162 | 162 | 161 |
| 17 | 140 | 140 | 145 | 134 | 145 | 104 | 141 | 147 | 155 | 163 | 161 | 158 |
| 18 | 139 | 138 | 151 | 136 | 144 | 139 | 142 | 152 | 152 | 160 | 154 | 162 |
| 19 | 138 | 137 | 147 | 136 | 145 | 227 | 140 | 150 | 168 | 159 | 162 | 151 |
| 20 | 137 | 139 | 127 | 135 | 143 | 184 | 143 | 151 | 143 | 155 | 163 | 154 |
| 21 | 139 | 140 | 140 | 136 | 144 | 155 | 147 | 155 | 142 | 159 | 162 | 156 |
| 22 | 131 | 115 | 151 | 89 | 142 | 141 | 150 | 159 | 142 | 163 | 163 | 165 |
| 23 | 111 | 73 | 93 | 136 | 143 | 147 | 149 | 160 | 141 | 164 | 160 | 164 |
| 24 | 110 | 115 | 92 | 144 | 142 | 117 | 147 | 159 | 161 | 163 | 158 | 164 |
| 25 | 155 | 150 | 113 | 131 | 142 | 132 | 145 | 159 | 162 | 162 | 155 | 159 |
| 26 | 152 | 152 | 150 | 130 | 144 | 143 | 139 | 161 | 165 | 161 | 163 | 164 |
| 27 | 150 | 153 | 152 | 146 | 143 | 100 | 147 | 161 | 164 | 160 | 164 | 165 |
| 28 | 139 | 151 | 150 | 147 | 145 | 58 | 149 | 151 | 156 | 163 | 159 | 161 |
| 29 | 132 | 152 | 150 | 148 | 124 | 136 | 154 | 84 | 157 | 161 | 162 | 165 |
| 30 | 131 | 151 | 152 | 150 | --- | 124 | 115 | 150 | 164 | 163 | 161 | 153 |
| 31 | 98 | --- | 153 | 152 | --- | 130 | --- | 155 | --- | 159 | 152 | --- |
| MEAN | 136 | 132 | 140 | 143 | 136 | 140 | 142 | 148 | 155 | 162 | 159 | 158 |

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25.5 | 19.0 | --- | 12.0 | 9.5 | 12.0 | 15.0 | 20.5 | 25.0 | 27.5 | 29.0 | 29.5 |
| 2 | 25.0 | 18.0 | 13.5 | 12.0 | 8.0 | 10.5 | 15.0 | 21.0 | 26.0 | 28.0 | 29.0 | 28.5 |
| 3 | 24.5 | 17.5 | 14.5 | 11.5 | 10.0 | 11.0 | 16.0 | 21.0 | 25.0 | 28.0 | 29.5 | 29.0 |
| 4 | 24.5 | 17.5 | --- | 12.0 | 10.5 | 11.5 | 17.0 | 23.0 | 25.0 | 28.0 | 27.0 | 29.5 |
| 5 | 24.0 | 17.0 | 14.0 | 12.0 | 11.0 | 11.5 | 17.0 | 23.0 | 25.0 | 30.0 | 27.5 | 28.0 |
| 6 | 25.0 | 17.5 | 14.5 | 11.5 | 11.0 | 12.0 | 17.0 | 23.5 | 26.0 | 30.0 | 27.5 | 27.0 |
| 7 | 25.0 | 17.0 | 14.0 | 11.5 | 10.5 | 13.0 | 18.0 | 23.0 | 26.0 | 29.0 | 29.5 | 27.0 |
| 8 | 25.0 | 17.5 | 14.5 | 11.5 | 10.0 | 13.5 | 19.0 | 22.0 | 27.0 | 28.0 | 29.0 | 27.5 |
| 9 | 26.5 | 18.0 | 14.0 | 12.0 | 8.0 | 13.0 | 19.0 | 22.5 | 26.0 | 28.0 | 27.0 | 27.0 |
| 10 | 24.0 | 16.5 | 14.0 | 12.0 | 8.5 | 13.5 | 19.0 | 23.0 | 26.0 | --- | 29.5 | 27.5 |
| 11 | 24.0 | 16.5 | 15.0 | 12.5 | 9.5 | 15.5 | --- | 23.5 | 26.0 | --- | 30.0 | 28.0 |
| 12 | 24.5 | 16.0 | 16.0 | 12.0 | 9.5 | 15.5 | 17.5 | 23.5 | 26.0 | --- | 30.5 | 28.0 |
| 13 | 24.0 | 15.0 | 14.5 | 12.0 | 10.0 | 16.0 | 17.0 | 22.5 | 26.0 | --- | 30.0 | 29.0 |
| 14 | 22.5 | 14.5 | 14.0 | 14.0 | 11.0 | 15.0 | 16.0 | 20.0 | 27.0 | --- | 29.5 | 30.0 |
| 15 | 23.0 | 14.0 | 13.0 | 13.0 | 11.0 | 14.5 | 16.0 | 21.0 | 27.5 | --- | 29.0 | 28.0 |
| 16 | 24.0 | 15.0 | 13.5 | --- | 10.0 | 16.5 | 17.0 | 21.0 | 24.0 | --- | 29.5 | 30.0 |
| 17 | 25.0 | 16.0 | 13.0 | 15.0 | 9.0 | 18.0 | 17.0 | 20.5 | 27.0 | 29.5 | 29.0 | 30.0 |
| 18 | 26.0 | 16.5 | 12.5 | 15.5 | 9.5 | 16.5 | 17.0 | 21.0 | 28.0 | 29.0 | 28.5 | 30.0 |
| 19 | 25.5 | 17.0 | 12.5 | 15.5 | 10.5 | 14.5 | 18.0 | 22.0 | 26.5 | 29.5 | 28.0 | 29.5 |
| 20 | 25.5 | 17.5 | 13.0 | 15.5 | 11.0 | 15.0 | 18.0 | 22.0 | 27.0 | 29.5 | 29.0 | 29.5 |
| 21 | 25.5 | 19.5 | 13.5 | 15.0 | 11.5 | 14.0 | 18.0 | 22.5 | 28.0 | 27.0 | 29.5 | 29.0 |
| 22 | 25.0 | 16.0 | 14.0 | 14.0 | --- | 14.0 | 19.5 | 22.0 | 28.0 | 26.0 | 29.0 | 29.0 |
| 23 | 23.0 | 14.5 | 14.5 | 13.0 | 15.0 | 15.0 | 19.5 | 23.0 | 25.5 | 28.0 | 29.0 | 28.5 |
| 24 | 22.0 | 15.0 | 14.0 | 13.0 | 13.5 | 14.0 | 18.0 | 23.0 | 25.0 | 27.0 | 29.0 | 28.5 |
| 25 | 21.0 | 16.0 | 14.0 | 12.5 | 12.5 | 14.0 | 17.5 | 23.0 | 26.5 | 28.0 | 29.0 | 27.0 |
| 26 | 20.5 | 17.0 | 13.0 | 13.0 | 11.0 | 14.0 | 18.5 | 24.0 | 25.0 | 29.0 | 29.0 | 27.0 |
| 27 | 21.5 | 17.0 | 13.0 | 12.0 | 12.0 | 14.5 | 19.0 | 25.0 | 28.0 | 29.0 | 28.0 | 27.0 |
| 28 | 22.0 | 16.0 | 14.0 | 12.5 | 12.0 | 14.5 | 19.0 | 24.5 | 27.0 | 27.0 | 29.0 | 26.0 |
| 29 | 23.5 | 15.0 | 14.5 | 11.5 | 12.5 | 15.0 | 20.0 | 25.5 | 28.5 | 29.0 | 28.0 | 27.5 |
| 30 | 28.5 | 14.5 | 13.5 | 12.0 | --- | 15.0 | 19.0 | 23.0 | 27.0 | 29.0 | 28.0 | 26.5 |
| 31 | 21.0 | --- | 12.5 | 11.0 | --- | 15.0 | --- | 23.0 | --- | 29.5 | 29.0 | --- |
| MEAN | 24.0 | 16.5 | 14.0 | 13.0 | 10.5 | 14.0 | 17.5 | 22.5 | 26.5 | 28.5 | 29.0 | 28.5 |

## 08028500 SABINE RIVER NEAR BON WIER, TX

LOCATION.--Lat 30°44'49", long 93°36'30", Beauregard Parish, Louisiana-Newton County, Texas State line, Hydrologic Unit 12010005, near left bank at downstream side of bridge on U.S. Highway 190, 0.7 mi (1.1 km) upstream from Quicksand Creek, 0.8 mi (1.3 km) upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 2.0 mi (3.2 km) east of Bon Wier, 2.4 mi (3.9 km) upstream from Caney Creek, and at mile 97.7 (157.2 km).

DRAINAGE AREA.--8,229 $mi^2$ (21,313 $km^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to current year. Monthly discharge only for some periods, published in WSP 1312. Gage-height records collected in this vicinity since 1913 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1342: 1953. WSP 1442: 1924, 1926-27(M), 1929(M), 1939. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 43.42 ft (13.234 m) National Geodetic Vertical Datum of 1929. Prior to July 8, 1931, nonrecording gage at site 0.8 mi (1.3 km) downstream at datum 3.00 ft (0.914 m) higher. July 8, 1931, to Oct. 15, 1958, nonrecording gage at present site at datum 3.00 ft (0.914 m) higher. Oct. 16, 1958, to Sept. 30, 1975, water-stage recorder at present site at datum 3.00 ft (0.914 m) higher.

REMARKS.--Water-discharge records fair. Flow regulated by Toledo Bend Reservoir (station 08025350) located 58.8 mi (94.6 km) upstream. Gage-height telemeter at station maintained by the National Weather Service.

AVERAGE DISCHARGE.--43 years (water years 1924-66) prior to completion of Toledo Bend Reservoir, 6,846 $ft^3/s$ (193.9 $m^3/s$), 4,960,000 acre-ft/yr (6.12 $km^3/yr$); 14 years (water years 1967-80) regulated, 6,284 $ft^3/s$ (178.0 $m^3/s$), 4,553,000 acre-ft/yr (5.61 $km^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 115,000 $ft^3/s$ (3,260 $m^3/s$) May 19, 1953, gage height, 28.70 ft (8.748 m); minimum daily, 134 $ft^3/s$ (3.79 $m^3/s$) Nov. 9, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1833, 33.5 ft (10.21 m) Apr. 23 or 24, 1913, from information by Gulf, Colorado, and Santa Fe Railway Co. and local residents. Flood in May 1884 reached a stage of 29 ft (8.8 m). Floods occurring about 1844 and 1860 were higher than flood in May 1884, from information by local residents. All flood data referenced to current datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 37,000 $ft^3/s$ (1,050 $m^3/s$) May 23, gage height, 24.15 ft (7.361 m); minimum daily, 418 $ft^3/s$ (11.8 $m^3/s$) Oct. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6840 | 1980 | 7220 | 8090 | 9800 | 10700 | 18500 | 7240 | 3320 | 3060 | 3930 | 1140 |
| 2 | 3260 | 1600 | 7180 | 8950 | 10200 | 13600 | 15800 | 4480 | 1980 | 4040 | 3920 | 968 |
| 3 | 1090 | 1300 | 7090 | 9390 | 9800 | 16300 | 14100 | 4990 | 3630 | 4030 | 1790 | 1830 |
| 4 | 803 | 1030 | 7070 | 9380 | 9200 | 16400 | 12200 | 3730 | 4910 | 4080 | 859 | 2710 |
| 5 | 716 | 866 | 6710 | 9630 | 7600 | 14900 | 13500 | 2390 | 4970 | 2000 | 3160 | 2650 |
| 6 | 669 | 767 | 6950 | 9630 | 7600 | 12700 | 13800 | 3310 | 5470 | 1000 | 5460 | 1780 |
| 7 | 639 | 702 | 5790 | 9290 | 10200 | 12200 | 12600 | 4280 | 4180 | 870 | 3750 | 769 |
| 8 | 596 | 659 | 6670 | 9040 | 10200 | 12100 | 9160 | 8480 | 2750 | 2750 | 2900 | 614 |
| 9 | 570 | 656 | 7060 | 6480 | 12100 | 11900 | 8400 | 13800 | 1440 | 3830 | 2860 | 1960 |
| 10 | 544 | 818 | 6990 | 5120 | 16500 | 11700 | 8160 | 14600 | 3350 | 4190 | 1940 | 1750 |
| 11 | 527 | 949 | 4240 | 4840 | 12800 | 10100 | 8050 | 9490 | 4340 | 4010 | 1190 | 738 |
| 12 | 517 | 814 | 1550 | 5110 | 12500 | 7060 | 12000 | 3740 | 4380 | 3990 | 1100 | 606 |
| 13 | 508 | 726 | 4450 | 5160 | 15600 | 5590 | 21300 | 3190 | 4310 | 1920 | 1070 | 724 |
| 14 | 492 | 675 | 9140 | 5040 | 19800 | 4070 | 25000 | 4100 | 4300 | 901 | 1050 | 942 |
| 15 | 478 | 639 | 10800 | 2090 | 19400 | 3460 | 29100 | 8220 | 2160 | 2710 | 1420 | 590 |
| 16 | 475 | 611 | 10200 | 1420 | 18200 | 2340 | 31300 | 17100 | 1170 | 4030 | 3430 | 962 |
| 17 | 469 | 586 | 8660 | 1320 | 16800 | 3740 | 31100 | 24200 | 3220 | 3950 | 2490 | 1340 |
| 18 | 462 | 574 | 10700 | 1250 | 16100 | 5720 | 29400 | 28400 | 2300 | 3960 | 1250 | 932 |
| 19 | 464 | 562 | 10900 | 1210 | 15600 | 5860 | 28600 | 31400 | 1660 | 3950 | 2160 | 1110 |
| 20 | 457 | 549 | 5330 | 1160 | 15400 | 6340 | 25900 | 33900 | 5730 | 1900 | 3270 | 932 |
| 21 | 452 | 544 | 1940 | 1130 | 15200 | 7680 | 21900 | 35400 | 5170 | 909 | 3350 | 1110 |
| 22 | 526 | 1130 | 3410 | 2150 | 15300 | 9460 | 19700 | 36400 | 2810 | 2830 | 3430 | 536 |
| 23 | 938 | 3950 | 4810 | 13000 | 15300 | 8560 | 19200 | 36700 | 2780 | 4090 | 3460 | 1880 |
| 24 | 978 | 6020 | 6390 | 11700 | 15300 | 8200 | 20300 | 35700 | 4100 | 4140 | 2310 | 6450 |
| 25 | 778 | 6490 | 7760 | 9030 | 15000 | 9780 | 21300 | 33000 | 4530 | 4050 | 1330 | 7030 |
| 26 | 1260 | 5730 | 6850 | 7350 | 14700 | 9790 | 23500 | 28300 | 4270 | 4020 | 2140 | 6130 |
| 27 | 1080 | 5830 | 7660 | 6040 | 12200 | 10400 | 25200 | 25200 | 4210 | 1920 | 3160 | 9120 |
| 28 | 672 | 7380 | 8440 | 5900 | 10300 | 17800 | 25300 | 20100 | 4200 | 1020 | 3220 | 12000 |
| 29 | 486 | 7360 | 8340 | 8080 | 8640 | 21100 | 24000 | 10500 | 4220 | 3090 | 2630 | 4320 |
| 30 | 418 | 7250 | 8230 | 8440 | --- | 22200 | 17900 | 6850 | 2080 | 4020 | 3450 | 4300 |
| 31 | 1160 | --- | 8150 | 8200 | --- | 20800 | --- | 5880 | --- | 3920 | 2500 | --- |
| TOTAL | 29324 | 68747 | 216680 | 194620 | 387340 | 332550 | 586270 | 505070 | 107940 | 95180 | 79979 | 77923 |
| MEAN | 946 | 2292 | 6990 | 6278 | 13360 | 10730 | 19540 | 16290 | 3598 | 3070 | 2580 | 2597 |
| MAX | 6840 | 7380 | 10900 | 13000 | 19800 | 22200 | 31300 | 36700 | 5730 | 4190 | 5460 | 12000 |
| MIN | 418 | 544 | 1550 | 1130 | 7600 | 2340 | 8050 | 2390 | 1170 | 870 | 859 | 536 |
| AC-FT | 58160 | 136400 | 429800 | 386000 | 768300 | 659600 | 1163000 | 1002000 | 214100 | 188800 | 158600 | 154600 |

CAL YR 1979 TOTAL 3987454 MEAN 10920 MAX 29600 MIN 418 AC-FT 7909000
WTR YR 1980 TOTAL 2681623 MEAN 7327 MAX 36700 MIN 418 AC-FT 5319000

## 08028500 SABINE RIVER NEAR BON WEIR, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: January 1970 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1970 to current year.
WATER TEMPERATURES: January 1970 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 407 micromhos Aug. 31, 1978; minimum daily, 36 micromhos May 1, 1973.
WATER TEMPERATURES: Maximum daily, 33.0°C July 17, 1978, and July 14, 26, 1980; minimum daily, 4.0°C Feb. 2, 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 294 micromhos Aug. 13, 15; minimum daily, 47 micromhos Apr. 13.
WATER TEMPERATURES: Maximum daily, 33.0°C July 14, 26; minimum daily, 4.0°C Feb. 2.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|
| OCT | | | | | | | |
| 07... | 1155 | 643 | 174 | 24.0 | 45 | 21 | 22 |
| 14... | 1815 | 493 | 185 | 24.0 | 45 | 19 | 21 |
| 21... | 0925 | 452 | 175 | 26.0 | 40 | 21 | 20 |
| 28... | 0740 | 724 | 239 | 20.0 | 90 | 39 | 28 |
| NOV | | | | | | | |
| 07... | 1500 | 698 | 251 | 18.0 | 100 | 41 | 23 |
| 14... | 0900 | 681 | 180 | 12.0 | 60 | 24 | 20 |
| 21... | 0815 | 540 | 174 | 13.0 | 60 | 23 | 19 |
| 28... | 1615 | 7480 | 147 | 15.0 | 25 | 16 | 19 |
| DEC | | | | | | | |
| 07... | 1620 | 5400 | 161 | 9.0 | 25 | 20 | 20 |
| 14... | 1720 | 10400 | 102 | 9.0 | 200 | 14 | 12 |
| 21... | 1430 | 1740 | 207 | 9.0 | 25 | 21 | 15 |
| 28... | 1145 | 9380 | 127 | 8.0 | 40 | 14 | 17 |
| JAN | | | | | | | |
| 07... | 1230 | 10000 | 152 | 9.0 | 15 | 16 | 18 |
| 14... | 1635 | 4660 | 146 | 10.0 | 20 | 15 | 16 |
| 21... | 1645 | 1120 | 126 | 16.0 | 40 | 12 | 10 |
| FEB | | | | | | | |
| 01... | 1620 | 10500 | 140 | 10.0 | 15 | 14 | 18 |
| 07... | 1730 | 11200 | 148 | 10.0 | 10 | 15 | 18 |
| 21... | 1745 | 15200 | 143 | 13.0 | 20 | 16 | 17 |
| MAR | | | | | | | |
| 07... | 1630 | 12200 | 150 | 7.0 | 20 | 16 | 17 |
| 14... | 1645 | 4660 | 143 | -- | 20 | 15 | 16 |
| 21... | 1820 | 8520 | 99 | -- | 50 | 12 | 11 |
| 28... | 1805 | 20400 | 89 | -- | 50 | 9.3 | 10 |
| APR | | | | | | | |
| 01... | 1805 | 17500 | 93 | 16.0 | 60 | 14 | 11 |
| 07... | 1545 | 11800 | -- | 19.0 | -- | 14 | 15 |
| 14... | 1330 | 25500 | 106 | 19.0 | 40 | 12 | 12 |
| 21... | 1730 | 21400 | 138 | 20.0 | 15 | 15 | 16 |
| MAY | | | | | | | |
| 07... | 1730 | 4870 | 155 | 24.0 | 15 | 18 | 19 |
| 14... | 1425 | 4420 | 130 | 22.0 | 15 | 16 | 15 |
| 21... | 1520 | 35700 | 144 | 22.0 | 30 | 18 | 19 |
| 28... | 1240 | 120300 | 154 | 26.0 | 15 | 19 | 21 |
| JUN | | | | | | | |
| 01... | 1300 | 2940 | 160 | 28.0 | -- | 19 | 20 |
| 07... | 0900 | 3490 | 175 | 27.0 | -- | 22 | 23 |
| JUN | | | | | | | |
| 14... | 0835 | 4300 | 175 | 27.0 | -- | 23 | 24 |
| 21... | 1155 | 5430 | 162 | 25.0 | -- | 20 | 22 |
| JUL | | | | | | | |
| 01... | 1025 | 3380 | 168 | 31.0 | -- | 21 | 23 |
| 07... | 0815 | 878 | 182 | 30.0 | -- | 22 | 24 |
| 14... | 1800 | 844 | 175 | 33.0 | -- | 22 | 26 |
| 21... | 1700 | 863 | 173 | 30.0 | -- | 23 | 26 |
| AUG | | | | | | | |
| 07... | 1650 | 3750 | 182 | 29.0 | -- | 26 | 25 |
| 14... | 1830 | 1050 | 288 | 30.0 | -- | 62 | 28 |
| 21... | 1915 | 3930 | 179 | 29.0 | -- | 27 | 27 |
| 28... | 1820 | 3810 | 169 | 28.0 | -- | 24 | 24 |
| SEP | | | | | | | |
| 08... | 1810 | 598 | 215 | 28.0 | -- | 12 | 16 |
| 15... | 1710 | 566 | 229 | 30.0 | -- | 35 | 34 |
| 22... | 1802 | 490 | 184 | 30.0 | -- | 23 | 23 |
| 29... | 1830 | 2390 | 167 | 26.0 | -- | 22 | 27 |

08028500 SABINE RIVER NEAR BON WEIR, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 154 | 253 | 153 | 153 | 160 | 137 | 83 | 148 | 155 | 166 | 164 | 181 |
| 2 | 164 | 203 | 158 | 155 | 133 | 128 | 87 | 127 | 169 | 162 | 163 | 182 |
| 3 | 173 | 218 | 158 | 155 | 124 | 139 | 120 | 182 | 135 | 176 | 170 | 157 |
| 4 | 199 | 242 | 160 | 152 | 144 | 144 | 127 | 149 | 164 | 167 | 184 | 167 |
| 5 | 159 | 259 | 161 | 150 | 134 | 143 | 131 | 159 | 197 | 178 | 156 | 169 |
| 6 | 164 | 251 | 158 | 151 | 143 | 146 | 131 | 137 | 169 | 172 | 173 | 174 |
| 7 | 174 | 251 | 161 | 152 | 148 | 150 | 135 | 155 | 175 | 182 | 182 | 190 |
| 8 | 174 | 245 | 158 | 150 | 148 | 149 | 135 | 160 | 175 | 153 | 193 | 215 |
| 9 | 158 | 226 | 158 | 141 | 121 | 151 | 138 | 157 | 188 | 163 | 212 | 169 |
| 10 | 157 | 208 | 157 | 141 | 83 | 145 | 140 | 161 | 146 | 163 | 207 | 170 |
| 11 | 157 | 181 | 159 | 141 | 84 | 145 | 140 | --- | 169 | 163 | 248 | 178 |
| 12 | 160 | 167 | 159 | 142 | 91 | 138 | 136 | 156 | 175 | 165 | 255 | 215 |
| 13 | 174 | 183 | 100 | 144 | 136 | 136 | 47 | 149 | 175 | 173 | 294 | 211 |
| 14 | 185 | 180 | 102 | 146 | 129 | 143 | 106 | 130 | 175 | 175 | 288 | 194 |
| 15 | 213 | 191 | 116 | 147 | 137 | 148 | 109 | 154 | 184 | 152 | 294 | 229 |
| 16 | 179 | 195 | 122 | 153 | 138 | 146 | 118 | 136 | 207 | 162 | 217 | 237 |
| 17 | 184 | 209 | 140 | 136 | 139 | 150 | 125 | 130 | 210 | 164 | 202 | 176 |
| 18 | 181 | 179 | 149 | 129 | 138 | 82 | 134 | 139 | 180 | 155 | 288 | 221 |
| 19 | 183 | 184 | 146 | 131 | 139 | 109 | 136 | 146 | 194 | 169 | 225 | 197 |
| 20 | 181 | 188 | 137 | 130 | 142 | 112 | 131 | 146 | 168 | 184 | 182 | 200 |
| 21 | 175 | 174 | 207 | 126 | 143 | 99 | 138 | 144 | 162 | 173 | 179 | 165 |
| 22 | 142 | 148 | 125 | 92 | 148 | 112 | 142 | 152 | 148 | 158 | 163 | 184 |
| 23 | 129 | 101 | 139 | 91 | 149 | 119 | 146 | 149 | 154 | 170 | 162 | 195 |
| 24 | 108 | 86 | 123 | 77 | 158 | 128 | 144 | 152 | 163 | 174 | 167 | 165 |
| 25 | 241 | 117 | 97 | 81 | 151 | 132 | 143 | 151 | 171 | 167 | 162 | 165 |
| 26 | 170 | 108 | 96 | 85 | 148 | 137 | 135 | 153 | 173 | 165 | 142 | 163 |
| 27 | 167 | 129 | 129 | 113 | 150 | 117 | 127 | 157 | 178 | 177 | 163 | 162 |
| 28 | 239 | 147 | 127 | 134 | 150 | 89 | 143 | 154 | 176 | 182 | 169 | 164 |
| 29 | 235 | 149 | 132 | 134 | 150 | 87 | 143 | 141 | 172 | 144 | 171 | 167 |
| 30 | 207 | 151 | 146 | 134 | --- | 88 | 142 | 115 | 178 | 151 | 172 | 155 |
| 31 | 207 | --- | 152 | 134 | --- | 91 | --- | 161 | --- | 161 | 170 | --- |
| MEAN | 177 | 184 | 141 | 132 | 136 | 127 | 127 | 148 | 173 | 167 | 197 | 184 |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24.0 | --- | 8.0 | 8.0 | 10.0 | 7.0 | 16.0 | 21.0 | 28.0 | 31.0 | 31.0 | 28.0 |
| 2 | 24.0 | 18.0 | 12.0 | 7.0 | 4.0 | 5.0 | 18.0 | 23.0 | 27.0 | 31.0 | 30.0 | 29.0 |
| 3 | 27.0 | 17.0 | 11.0 | 8.0 | 5.0 | 10.0 | 18.0 | 23.0 | 28.0 | 29.0 | 28.0 | 29.0 |
| 4 | 26.0 | 17.0 | 11.0 | 9.0 | 12.0 | 9.5 | 18.0 | 22.0 | 27.0 | 29.0 | 29.0 | 28.0 |
| 5 | 24.0 | 17.0 | 12.0 | 7.0 | 10.0 | 12.0 | 18.0 | 24.0 | 27.0 | 30.0 | 30.0 | 26.0 |
| 6 | 22.0 | 19.0 | 13.0 | 8.0 | 10.5 | 7.0 | 19.0 | 23.0 | 26.5 | 29.5 | 28.0 | 27.0 |
| 7 | 24.0 | 18.0 | 9.0 | 9.0 | 10.0 | 7.0 | 19.0 | 24.0 | 27.0 | 30.0 | 29.0 | 26.5 |
| 8 | 24.0 | 17.0 | 8.0 | 7.0 | 10.0 | 7.0 | 20.0 | 22.0 | 26.0 | 32.0 | 28.0 | 28.0 |
| 9 | 24.0 | 19.0 | 5.0 | 8.0 | 5.0 | 7.0 | 20.0 | 22.0 | 27.0 | 32.0 | 28.0 | 29.0 |
| 10 | 22.0 | 17.0 | 9.0 | 9.0 | 5.0 | 7.0 | 22.0 | 22.0 | 28.0 | 32.0 | 30.0 | 29.0 |
| 11 | 24.0 | 16.0 | 10.0 | 10.0 | 9.0 | --- | 21.0 | --- | 28.0 | 31.0 | 30.0 | 28.0 |
| 12 | 24.0 | 14.0 | 10.0 | 7.0 | 8.0 | --- | 19.0 | 24.0 | 28.0 | 31.0 | 30.0 | 28.0 |
| 13 | 22.0 | 14.0 | 11.0 | 8.0 | 9.0 | --- | 18.0 | 25.0 | 28.0 | 30.0 | 31.0 | 28.0 |
| 14 | 24.0 | 12.0 | 9.0 | 10.0 | 6.0 | --- | 19.0 | 22.0 | 27.0 | 33.0 | 30.0 | 29.0 |
| 15 | 24.0 | 10.5 | 8.0 | 11.0 | 11.0 | --- | 21.0 | 21.0 | 28.0 | 32.0 | 30.0 | 30.0 |
| 16 | 24.0 | 8.0 | 8.0 | 13.0 | 5.0 | 10.0 | 18.0 | 22.0 | 27.0 | 31.0 | 29.0 | 29.0 |
| 17 | 24.0 | 8.0 | 8.0 | 16.0 | 5.0 | 10.0 | 20.0 | 22.0 | 27.0 | 31.0 | 28.0 | 28.0 |
| 18 | 26.0 | 8.0 | 7.0 | 18.0 | 9.0 | 9.0 | 19.0 | 22.0 | 27.0 | 31.0 | 29.0 | 29.0 |
| 19 | 24.0 | 10.0 | 7.0 | 13.0 | 10.0 | 10.0 | 17.0 | 22.0 | 28.0 | 29.0 | 29.0 | 28.0 |
| 20 | 25.0 | 11.0 | 9.0 | 12.0 | 13.0 | 10.0 | 18.0 | 22.0 | 27.0 | 29.0 | 29.0 | 28.0 |
| 21 | 26.0 | 13.0 | 9.0 | 16.0 | 13.0 | --- | 20.0 | 22.0 | 25.0 | 30.0 | 29.0 | 29.0 |
| 22 | 24.0 | 13.0 | 9.0 | 14.5 | 12.0 | --- | 20.0 | 23.0 | 26.0 | 30.0 | 29.0 | 30.0 |
| 23 | 22.0 | 8.0 | 10.0 | 12.5 | 10.0 | --- | 20.0 | --- | 27.5 | 30.0 | 28.0 | 30.0 |
| 24 | 24.0 | 7.0 | 9.0 | 13.0 | 8.0 | --- | 20.0 | 26.0 | 28.0 | 30.0 | 27.0 | 26.0 |
| 25 | 24.0 | 11.0 | 8.0 | 11.0 | 11.0 | --- | 20.0 | 26.0 | 27.5 | 30.0 | 29.0 | 28.0 |
| 26 | 20.0 | 14.0 | 8.0 | 12.0 | 11.0 | --- | 18.0 | 26.0 | 29.0 | 33.0 | 29.0 | 27.0 |
| 27 | 19.0 | 16.0 | 8.0 | 7.0 | 12.0 | --- | 20.5 | 26.0 | 28.0 | 29.0 | 29.0 | 26.5 |
| 28 | 20.0 | 15.0 | 8.0 | 12.0 | 8.0 | --- | 20.5 | 26.0 | 29.0 | 29.0 | 28.0 | 26.5 |
| 29 | 22.0 | 14.0 | 9.0 | 11.0 | 8.0 | --- | 21.0 | 26.0 | 29.0 | 30.0 | 27.0 | 26.0 |
| 30 | 21.0 | 13.0 | 7.0 | 12.0 | --- | 15.0 | 20.0 | 27.0 | 30.0 | 31.0 | 26.0 | 26.0 |
| 31 | 20.0 | --- | 8.0 | 10.5 | --- | 15.0 | --- | 27.0 | --- | 29.0 | 30.0 | --- |
| MEAN | 23.5 | 13.5 | 9.0 | 10.5 | 9.0 | 9.5 | 19.5 | 23.5 | 27.5 | 30.5 | 29.0 | 28.0 |

## 08028500 SABINE RIVER NEAR BON WEIR, TX--Continued

### COLOR (PLATINUM-COBALT UNITS), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | 100 | 20 | 20 | 15 | 20 | 60 | 30 | 40 | 30 | 20 | 60 |
| 2 | 40 | 100 | 15 | 15 | 30 | 25 | 60 | 50 | 50 | 20 | 20 | 50 |
| 3 | 15 | 100 | 20 | 20 | 50 | 20 | 30 | 10 | 50 | 30 | 30 | 40 |
| 4 | 50 | 100 | 20 | 15 | 15 | 20 | 20 | 30 | 40 | 30 | 50 | 30 |
| 5 | 40 | 100 | 20 | 15 | 30 | 20 | 25 | 40 | 40 | 40 | 30 | 30 |
| 6 | 40 | 100 | 15 | 20 | 25 | 15 | --- | 25 | 30 | 20 | 30 | 30 |
| 7 | 45 | 100 | 25 | 15 | 10 | 20 | 30 | 15 | 40 | 30 | 30 | 30 |
| 8 | 65 | 100 | 15 | 15 | 20 | 15 | 20 | 15 | 40 | 20 | 50 | 40 |
| 9 | 60 | 100 | 20 | 20 | 45 | 20 | 20 | 10 | 30 | 20 | 60 | 30 |
| 10 | 60 | 80 | 15 | 15 | 70 | 20 | 10 | 5 | 30 | 20 | 50 | 30 |
| 11 | 40 | 70 | 25 | 10 | 30 | 10 | 20 | --- | 30 | 20 | 70 | 30 |
| 12 | 40 | 65 | 30 | 30 | 40 | 20 | 20 | 15 | 30 | 20 | 70 | 50 |
| 13 | 55 | 70 | 120 | 20 | 140 | 20 | 60 | 20 | 20 | 20 | 100 | 50 |
| 14 | 45 | 60 | 200 | 20 | 30 | 20 | 40 | 15 | 30 | 20 | 90 | 40 |
| 15 | 45 | 70 | 50 | 30 | 30 | 20 | 50 | 5 | 30 | 20 | 100 | 60 |
| 16 | 50 | 70 | 50 | 40 | 25 | 20 | 20 | 30 | 30 | 20 | 70 | 70 |
| 17 | 40 | 60 | 30 | 40 | 25 | 50 | 30 | 10 | 30 | 20 | 40 | 40 |
| 18 | 50 | 50 | 30 | 30 | 20 | 80 | 20 | 25 | 50 | 30 | 60 | 60 |
| 19 | 60 | 55 | 25 | 35 | 20 | 40 | 20 | 15 | 40 | 20 | 50 | 40 |
| 20 | 50 | 60 | 30 | 45 | 15 | 40 | 20 | 25 | 40 | 20 | 30 | 50 |
| 21 | 40 | 60 | 25 | 40 | 20 | 50 | 15 | 30 | 20 | 40 | 40 | 40 |
| 22 | 40 | 5 | 40 | 80 | 30 | 45 | 20 | 30 | 30 | 30 | 20 | 50 |
| 23 | 55 | 75 | 20 | 50 | 25 | 40 | 10 | 15 | 40 | 30 | 30 | 60 |
| 24 | 80 | 80 | 30 | 80 | 25 | 30 | 5 | 15 | 40 | 30 | 30 | 20 |
| 25 | 120 | 50 | 95 | 80 | 20 | 20 | 80 | 10 | 30 | 20 | 60 | 20 |
| 26 | 80 | 65 | 60 | 80 | 25 | 20 | 30 | 20 | 30 | 20 | 30 | 20 |
| 27 | 90 | 45 | 30 | 40 | 25 | 50 | 30 | 10 | 30 | 30 | 30 | 20 |
| 28 | 90 | 25 | 40 | 40 | 30 | 50 | 20 | 15 | 30 | 30 | 40 | 20 |
| 29 | 55 | 20 | 30 | 20 | 25 | 50 | 30 | 30 | 20 | 20 | 40 | 30 |
| 30 | 90 | 20 | 40 | 20 | --- | 50 | 30 | 40 | 20 | 20 | 60 | 30 |
| 31 | 90 | --- | 15 | 20 | --- | 60 | --- | 25 | --- | 20 | 30 | --- |
| MEAN | 55 | 70 | 39 | 33 | 31 | 32 | 29 | 21 | 34 | 25 | 47 | 39 |

## 08029500 BIG COW CREEK NEAR NEWTON, TX

**LOCATION.**--Lat 30°49'08", long 93°47'07", Newton County, Hydrologic Unit 12010005, near center of span at downstream side bridge on State Highway 87, 2.6 mi (4.2 km) southwest of Newton, 5.0 mi (8.0 km) downstream from Melhomes Creek, and 8.0 mi (12.9 km) upstream from White Oak Creek.

**DRAINAGE AREA.**--128 mi$^2$ (332 km$^2$).

**PERIOD OF RECORD.**--April 1952 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 134.69 ft (41.054 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 19, 1957, nonrecording gage at same site and datum.

**REMARKS.**--Records good. No known diversion above station. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--28 years, 113 ft$^3$/s (3.200 m$^3$/s), 11.99 in/yr (305 mm/yr), 81,870 acre-ft/yr (101 hm$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 20,200 ft$^3$/s (572 m$^3$/s) Apr. 29, 1953, gage height, 19.45 ft (5.928 m); minimum daily, 10 ft$^3$/s (0.28 m$^3$/s) July 7, 8, 21-23, 1971.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since at least 1907, 27.5 ft (8.38 m) in April 1922, from information by local resident.

**EXTREMES FOR CURRENT YEAR.**--Peak discharges above base of 1,100 ft$^3$/s (31.2 m$^3$/s) and maximum (*):

| Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Jan. 23 | 1300 | 1,170 | 33.1 | 14.41 | 4.392 | Apr. 13 | 0600 | 2,160 | 61.2 | 15.47 | 4.715 |
| Feb. 10 | 0500 | 1,740 | 49.3 | 15.16 | 4.621 | May 17 | 0500 | 1,310 | 37.1 | 14.66 | 4.468 |
| Mar. 28 | 1900 | *2,290 | 64.9 | 15.54 | 4.737 | | | | | | |

Minimum discharge, 25 ft$^3$/s (0.71 m$^3$/s) Aug. 26.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 65 | 477 | 80 | 84 | 134 | 532 | 215 | 97 | 73 | 38 | 41 | 36 |
| 2 | 62 | 188 | 80 | 79 | 105 | 498 | 172 | 102 | 70 | 37 | 37 | 34 |
| 3 | 59 | 94 | 79 | 85 | 98 | 192 | 157 | 98 | 67 | 37 | 35 | 32 |
| 4 | 57 | 79 | 77 | 107 | 93 | 151 | 142 | 88 | 65 | 36 | 35 | 35 |
| 5 | 56 | 73 | 77 | 102 | 89 | 159 | 121 | 85 | 63 | 36 | 38 | 34 |
| 6 | 54 | 70 | 77 | 85 | 88 | 150 | 112 | 81 | 61 | 35 | 45 | 35 |
| 7 | 53 | 67 | 78 | 81 | 86 | 131 | 112 | 78 | 60 | 35 | 40 | 44 |
| 8 | 54 | 66 | 77 | 79 | 101 | 131 | 112 | 79 | 58 | 34 | 36 | 41 |
| 9 | 53 | 80 | 73 | 77 | 954 | 124 | 103 | 81 | 57 | 33 | 33 | 37 |
| 10 | 52 | 105 | 71 | 77 | 1480 | 116 | 94 | 77 | 57 | 33 | 32 | 34 |
| 11 | 51 | 111 | 72 | 186 | 592 | 110 | 92 | 73 | 56 | 32 | 32 | 32 |
| 12 | 51 | 78 | 162 | 176 | 225 | 109 | 561 | 71 | 53 | 32 | 32 | 31 |
| 13 | 51 | 70 | 214 | 105 | 171 | 108 | 1600 | 73 | 51 | 31 | 32 | 29 |
| 14 | 51 | 66 | 191 | 88 | 146 | 99 | 1000 | 105 | 49 | 31 | 32 | 28 |
| 15 | 50 | 64 | 117 | 82 | 137 | 95 | 383 | 171 | 49 | 30 | 31 | 28 |
| 16 | 49 | 64 | 94 | 81 | 136 | 117 | 187 | 898 | 48 | 30 | 30 | 29 |
| 17 | 50 | 63 | 85 | 79 | 142 | 371 | 148 | 1260 | 48 | 29 | 29 | 28 |
| 18 | 52 | 63 | 80 | 77 | 125 | 215 | 135 | 648 | 47 | 30 | 29 | 28 |
| 19 | 52 | 64 | 77 | 75 | 114 | 166 | 121 | 241 | 47 | 36 | 30 | 49 |
| 20 | 50 | 65 | 78 | 73 | 111 | 291 | 111 | 260 | 51 | 40 | 31 | 53 |
| 21 | 51 | 67 | 78 | 74 | 107 | 276 | 103 | 258 | 66 | 37 | 29 | 43 |
| 22 | 83 | 281 | 79 | 370 | 102 | 210 | 98 | 186 | 112 | 36 | 27 | 36 |
| 23 | 120 | 545 | 112 | 1040 | 97 | 141 | 93 | 212 | 69 | 37 | 27 | 34 |
| 24 | 98 | 389 | 340 | 387 | 93 | 150 | 90 | 131 | 57 | 37 | 27 | 34 |
| 25 | 63 | 158 | 227 | 167 | 89 | 148 | 177 | 110 | 51 | 33 | 26 | 36 |
| 26 | 57 | 114 | 129 | 160 | 85 | 140 | 634 | 102 | 48 | 31 | 26 | 34 |
| 27 | 54 | 100 | 98 | 145 | 82 | 334 | 297 | 95 | 45 | 31 | 27 | 33 |
| 28 | 53 | 92 | 90 | 116 | 83 | 1560 | 140 | 89 | 43 | 42 | 32 | 33 |
| 29 | 54 | 88 | 90 | 111 | 100 | 1260 | 110 | 89 | 42 | 112 | 35 | 34 |
| 30 | 66 | 83 | 97 | 117 | --- | 928 | 100 | 81 | 39 | 76 | 35 | 54 |
| 31 | 565 | --- | 93 | 161 | --- | 434 | --- | 77 | --- | 48 | 34 | --- |
| TOTAL | 2336 | 3924 | 3372 | 4726 | 5965 | 9446 | 7520 | 6096 | 1702 | 1195 | 1005 | 1068 |
| MEAN | 75.4 | 131 | 109 | 152 | 206 | 305 | 251 | 197 | 56.7 | 38.5 | 32.4 | 35.6 |
| MAX | 565 | 545 | 340 | 1040 | 1480 | 1560 | 1600 | 1260 | 112 | 112 | 45 | 54 |
| MIN | 49 | 63 | 71 | 73 | 82 | 95 | 90 | 71 | 39 | 29 | 26 | 28 |
| CFSM | .59 | 1.02 | .85 | 1.19 | 1.61 | 2.38 | 1.96 | 1.54 | .44 | .30 | .25 | .28 |
| IN. | .68 | 1.14 | .98 | 1.37 | 1.73 | 2.75 | 2.19 | 1.77 | .49 | .35 | .29 | .31 |
| AC-FT | 4630 | 7780 | 6690 | 9370 | 11830 | 18740 | 14920 | 12090 | 3380 | 2370 | 1990 | 2120 |

CAL YR 1979 TOTAL 65106 MEAN 178 MAX 1360 MIN 41 CFSM 1.39 IN 18.92 AC-FT 129100
WTR YR 1980 TOTAL 48355 MEAN 132 MAX 1600 MIN 26 CFSM 1.03 IN 14.05 AC-FT 95910

## 08030000 CYPRESS CREEK NEAR BUNA, TX

LOCATION.--Lat 30°25'52", long 93°54'28", Jasper County, Hydrologic Unit 12010005, near center of span at downstream side of bridge on Farm Road 253, 0.3 mi (0.5 km) downstream from Boggy Creek, 3.2 mi (5.1 km) east of Buna, and 9.5 mi (15.3 km) upstream from Little Cypress Creek.

DRAINAGE AREA.--69.2 mi² (179.2 km²).

PERIOD OF RECORD.--March 1952 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 46.16 ft (14.070 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 23, 1957, nonrecording gage at same site and datum.

REMARKS.--Records good. No known diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--28 years, 69.7 ft³/s (1.974 m³/s), 13.68 in/yr (347 mm/yr), 50,500 acre-ft/yr (62.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,100 ft³/s (201 m³/s) Sept. 18, 1963, gage height, 13.28 ft (4.048 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*)

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Jan. 22 | 2000 | 3,180 | 90.1 | 11.55 | 3.520 | Apr. 12 | 2300 | 1,120 | 31.7 | 9.89 | 3.014 |
| Feb. 9 | 1900 | 1,280 | 36.2 | 10.05 | 3.063 | May 17 | 0300 | *4,290 | 121 | 12.15 | 3.703 |
| Mar. 29 | 2300 | 1,730 | 49.0 | 10.50 | 3.200 | | | | | | |

Minimum discharge, no flow for many days.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.5 | 151 | 7.1 | 56 | 49 | 56 | 598 | 3.3 | 1.4 | .00 | .00 | .00 |
| 2 | 1.8 | 82 | 5.2 | 39 | 37 | 68 | 326 | 3.0 | 1.1 | .00 | .00 | .00 |
| 3 | 1.3 | 44 | 4.1 | 60 | 41 | 63 | 162 | 2.1 | .68 | .00 | .00 | .00 |
| 4 | .92 | 23 | 3.3 | 123 | 40 | 42 | 75 | 1.4 | .36 | .00 | .00 | .00 |
| 5 | .65 | 13 | 2.8 | 68 | 32 | 39 | 39 | .99 | .20 | .00 | .00 | .00 |
| 6 | .48 | 8.1 | 2.4 | 45 | 30 | 36 | 22 | .63 | .12 | .00 | .00 | .00 |
| 7 | .40 | 5.0 | 2.0 | 35 | 25 | 27 | 16 | .50 | .11 | .00 | .00 | .00 |
| 8 | .39 | 3.5 | 1.7 | 32 | 42 | 22 | 14 | .39 | .11 | .00 | .00 | .00 |
| 9 | .36 | 2.9 | 1.5 | 47 | 931 | 18 | 10 | .30 | .09 | .00 | .00 | .00 |
| 10 | .34 | 2.4 | 1.2 | 36 | 974 | 14 | 6.8 | .23 | .08 | .00 | .00 | .00 |
| 11 | .32 | 1.8 | 1.1 | 128 | 655 | 9.6 | 4.7 | .20 | .06 | .00 | .00 | .00 |
| 12 | .30 | 1.4 | 77 | 121 | 499 | 7.7 | 543 | .18 | .04 | .00 | .00 | .00 |
| 13 | .30 | 2.8 | 482 | 68 | 298 | 9.0 | 946 | .16 | .02 | .00 | .00 | .00 |
| 14 | .28 | 3.5 | 489 | 43 | 122 | 7.0 | 676 | 9.6 | .00 | .00 | .00 | .00 |
| 15 | .25 | 2.7 | 397 | 30 | 127 | 4.1 | 452 | 111 | .00 | .00 | .00 | .00 |
| 16 | .25 | 2.0 | 325 | 24 | 198 | 6.5 | 259 | 2130 | .00 | .00 | .00 | .00 |
| 17 | .24 | 1.5 | 164 | 22 | 187 | 146 | 88 | 3680 | .00 | .00 | .00 | .00 |
| 18 | .23 | 1.2 | 68 | 22 | 115 | 157 | 37 | 1670 | .00 | .00 | .00 | .00 |
| 19 | .22 | .92 | 38 | 20 | 76 | 85 | 20 | 924 | .00 | .00 | .00 | .00 |
| 20 | .20 | .75 | 26 | 28 | 56 | 92 | 12 | 669 | .00 | .00 | .00 | .00 |
| 21 | .20 | .64 | 21 | 185 | 42 | 174 | 7.7 | 416 | .00 | .00 | .00 | .00 |
| 22 | 11 | 32 | 19 | 1470 | 32 | 142 | 5.2 | 350 | .00 | .00 | .00 | .00 |
| 23 | 14 | 262 | 61 | 2050 | 22 | 129 | 3.8 | 157 | .00 | .00 | .00 | .00 |
| 24 | 2.9 | 192 | 682 | 1210 | 15 | 136 | 2.9 | 83 | .00 | .00 | .00 | .00 |
| 25 | 1.0 | 91 | 514 | 744 | 11 | 87 | 3.5 | 42 | .00 | .00 | .00 | .00 |
| 26 | .45 | 54 | 236 | 475 | 7.0 | 77 | 68 | 20 | .00 | .00 | .00 | .00 |
| 27 | .36 | 34 | 112 | 257 | 4.9 | 454 | 36 | 10 | .00 | .00 | .00 | .00 |
| 28 | .35 | 22 | 66 | 109 | 3.7 | 1240 | 15 | 5.7 | .00 | .00 | .00 | .00 |
| 29 | .33 | 15 | 68 | 62 | 4.2 | 1300 | 8.3 | 3.6 | .00 | .00 | .00 | .00 |
| 30 | 2.1 | 10 | 97 | 44 | --- | 1500 | 4.8 | 2.3 | .00 | .00 | .00 | .00 |
| 31 | 280 | --- | 78 | 46 | --- | 927 | --- | 1.6 | --- | .00 | .00 | --- |
| TOTAL | 324.42 | 1066.11 | 3952.4 | 7699 | 4675.8 | 7074.9 | 4461.7 | 10298.18 | 4.37 | .00 | .00 | .00 |
| MEAN | 10.5 | 35.5 | 127 | 248 | 161 | 228 | 149 | 332 | .15 | .000 | .000 | .000 |
| MAX | 280 | 262 | 582 | 2050 | 974 | 1500 | 946 | 3680 | 1.4 | .00 | .00 | .00 |
| MIN | .20 | .64 | 1.1 | 20 | 3.7 | 4.1 | 2.9 | .16 | .00 | .00 | .00 | .00 |
| CFSM | .15 | .51 | 1.84 | 3.58 | 2.33 | 3.30 | 2.15 | 4.80 | .002 | .000 | .000 | .000 |
| IN. | .17 | .57 | 2.12 | 4.14 | 2.51 | 3.80 | 2.40 | 5.54 | .00 | .00 | .00 | .00 |
| AC-FT | 643 | 2110 | 7840 | 15270 | 9270 | 14030 | 8850 | 20430 | 8.7 | .00 | .00 | .00 |

CAL YR 1979 TOTAL 53028.99 MEAN 145 MAX 2070 MIN .20 CFSM 2.10 IN 28.51 AC-FT 105200
WTR YR 1980 TOTAL 39556.88 MEAN 108 MAX 3680 MIN .00 CFSM 1.56 IN 21.26 AC-FT 78460

## 08030500 SABINE RIVER NEAR RULIFF, TX
(Radiochemical and national stream-quality accounting network)

LOCATION.--Lat 30°18'13", long 93°44'37", Calcasieu Parish, Louisiana-Newton County, Texas State line, Hydrologic Unit 12010005, at downstream side of bridge on State Highway 12, 2.4 mi (3.9 km) north of Ruliff, 4.2 mi (6.8 km) upstream from the Kansas City Southern Railway Co. bridge, 4.5 mi (7.2 km) downstream from Cypress Creek, and at mile 40.2 (64.7 km).

DRAINAGE AREA.--9,329 mi$^2$ (24,162 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1924 to current year.

REVISED RECORDS.--WSP 1282: 1941(M), 1942. WSP 1442: 1925-29, 1937-39, 1943. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4.08 ft (1.244 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 1, 1941, nonrecording gage at Kansas City Southern Railway Co. bridge, 4.2 mi (6.8 km) downstream and at datum 2.02 ft (0.616 m) lower. Mar. 1, 1941, to Dec. 8, 1948, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records fair. Flow is partly regulated by Toledo Bend Reservoir (station 08025350) 116.3 mi (187.1 km) upstream.

AVERAGE DISCHARGE.--42 years (water years 1925-66) prior to completion of Toledo Bend Reservoir, 8,422 ft$^3$/s (238.5 m$^3$/s), 6,102,000 acre-ft/yr (7.52 km$^3$/yr); 14 years (water years 1967-80) regulated, 7,743 ft$^3$/s (219.3 m$^3$/s), 5,610,000 acre-ft/yr (6.92 km$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 121,000 ft$^3$/s (3,430 m$^3$/s) May 22, 1953, gage height, 19.98 ft (6.090 m); minimum, 270 ft$^3$/s (7.65 m$^3$/s) Sept. 27-30, Oct. 1-3, 17-20, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1835, 22.2 ft (6.77 m) in May or June 1884 (adjusted to present site and datum on basis of slope of flood of June 8, 9, 1950); flood of Apr. 26-29, 1913, reached a stage of 19.5 ft (5.94 m), present site and datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40,700 ft$^3$/s (1,150 m$^3$/s) May 19, gage height, 15.43 ft (4.703 m); minimum daily, 818 ft$^3$/s (23.2 m$^3$/s) Oct. 21.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11200 | 2120 | 8110 | 10000 | 10300 | 15400 | 29000 | 23500 | 12800 | 3610 | 4060 | 3390 |
| 2 | 10200 | 3520 | 8240 | 9980 | 10400 | 14200 | 27600 | 21100 | 9870 | 2790 | 4180 | 2360 |
| 3 | 8520 | 4110 | 8260 | 10000 | 10900 | 13400 | 24200 | 16600 | 6760 | 3400 | 4190 | 1560 |
| 4 | 5510 | 3580 | 8230 | 10100 | 11400 | 13800 | 20400 | 12400 | 4520 | 3770 | 3660 | 1520 |
| 5 | 2910 | 2700 | 8190 | 10400 | 11800 | 15200 | 17800 | 9150 | 4440 | 3890 | 2180 | 2500 |
| 6 | 1780 | 2040 | 8160 | 10700 | 11800 | 16400 | 16000 | 6460 | 4790 | 3510 | 2090 | 2920 |
| 7 | 1450 | 1650 | 8020 | 10900 | 11200 | 17100 | 14900 | 4670 | 5120 | 2140 | 3810 | 2750 |
| 8 | 1300 | 1460 | 7870 | 10900 | 10600 | 16900 | 14400 | 4630 | 5020 | 1400 | 4560 | 1780 |
| 9 | 1200 | 1370 | 7550 | 11000 | 12100 | 16000 | 13900 | 5410 | 4390 | 1700 | 4000 | 1170 |
| 10 | 1120 | 1330 | 7510 | 11000 | 14700 | 15100 | 13100 | 7050 | 3080 | 3060 | 3440 | 1290 |
| 11 | 1050 | 1420 | 7730 | 10200 | 17300 | 14300 | 11800 | 8840 | 2700 | 3670 | 3030 | 2260 |
| 12 | 1000 | 1680 | 7710 | 8740 | 19600 | 14000 | 11300 | 10400 | 3560 | 3920 | 2090 | 1620 |
| 13 | 965 | 1660 | 6710 | 7660 | 21700 | 13300 | 11900 | 11000 | 3990 | 3940 | 1570 | 1080 |
| 14 | 936 | 1460 | 6630 | 7160 | 22000 | 11400 | 13700 | 9530 | 4130 | 3490 | 1420 | 928 |
| 15 | 899 | 1320 | 8260 | 6830 | 20700 | 8910 | 17000 | 7550 | 4150 | 2090 | 1370 | 1150 |
| 16 | 878 | 1220 | 10100 | 5760 | 19700 | 6670 | 22800 | 10700 | 3710 | 1810 | 1400 | 1050 |
| 17 | 858 | 1160 | 11600 | 3940 | 20400 | 5050 | 29200 | 21600 | 2430 | 3200 | 2300 | 910 |
| 18 | 846 | 1120 | 12500 | 2920 | 21200 | 4840 | 33100 | 30000 | 2210 | 3800 | 3150 | 1460 |
| 19 | 828 | 1090 | 12500 | 2480 | 21100 | 6330 | 33800 | 39100 | 2990 | 3970 | 2300 | 1320 |
| 20 | 821 | 1060 | 12200 | 2420 | 20200 | 7340 | 31900 | 40000 | 2250 | 4020 | 1830 | 1420 |
| 21 | 818 | 1040 | 11900 | 2850 | 19300 | 7980 | 30100 | 38100 | 3190 | 3590 | 2780 | 1260 |
| 22 | 839 | 1160 | 10000 | 3690 | 18500 | 8670 | 27900 | 37200 | 4320 | 2210 | 3280 | 1470 |
| 23 | 955 | 2200 | 7070 | 7840 | 17900 | 9470 | 25000 | 37100 | 4380 | 2010 | 3450 | 1220 |
| 24 | 1220 | 4510 | 6490 | 13700 | 17500 | 10300 | 21900 | 37500 | 3400 | 3380 | 3530 | 1140 |
| 25 | 1720 | 6380 | 7100 | 17600 | 17300 | 10800 | 20300 | 37700 | 3450 | 3990 | 3340 | 3480 |
| 26 | 1670 | 7520 | 8440 | 19400 | 17000 | 10900 | 19700 | 36600 | 3910 | 4220 | 2340 | 5180 |
| 27 | 1500 | 8030 | 9760 | 19400 | 16800 | 12300 | 20000 | 33200 | 4150 | 4250 | 1920 | 5950 |
| 28 | 1710 | 7870 | 10100 | 17400 | 16800 | 15100 | 21200 | 29000 | 4140 | 3770 | 2800 | 6380 |
| 29 | 1370 | 7650 | 9970 | 14100 | 16300 | 17400 | 23400 | 26200 | 4080 | 2340 | [illegible] | 7190 |
| 30 | 1100 | 7860 | 9980 | 11400 | --- | 20700 | 24100 | 21400 | 4060 | 2240 | 3250 | 8070 |
| 31 | 1380 | --- | 10000 | 10400 | --- | 26600 | --- | 16500 | --- | 3570 | 3130 | --- |
| TOTAL | 68553 | 91290 | 276890 | 300870 | 476500 | 395860 | 641400 | 650190 | 131990 | 98750 | 89700 | 75778 |
| MEAN | 2211 | 3043 | 8932 | 9705 | 16430 | 12770 | 21380 | 20970 | 4400 | 3185 | 2894 | 2526 |
| MAX | 11200 | 8030 | 12500 | 19400 | 22000 | 26600 | 33800 | 40000 | 12800 | 4250 | 4560 | 8070 |
| MIN | 818 | 1040 | 6490 | 2420 | 10300 | 4840 | 11300 | 4630 | 2210 | 1400 | 1370 | 910 |
| AC-FT | 136000 | 181100 | 549200 | 596800 | 945100 | 785200 | 1272000 | 1290000 | 261800 | 195900 | 177900 | 150300 |

CAL YR 1979 TOTAL 4649843 MEAN 12740 MAX 41100 MIN 818 AC-FT 9223000
WTR YR 1980 TOTAL 3297771 MEAN 9010 MAX 40000 MIN 818 AC-FT 6541000

## 08030500 SABINE RIVER NEAR RULIFF, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1945 to September 1946, October 1947 to current year. Chemical and biochemical analyses: October 1967 to current. Pesticide analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1945 to September 1946, October 1947 to current year.
WATER TEMPERATURES: October 1947 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equation developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 779 micromhos Aug. 31, 1966; minimum, 28 micromhos Sept. 19, 1963.
WATER TEMPERATURES: Maximum, 36.0°C Aug. 14, 1962; minimum, 1.0°C Jan. 28, 1948.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 265 micromhos Aug. 17; minimum daily, 40 micromhos May 18.
WATER TEMPERATURES: Maximum daily, 31.0°C on several days during July; minimum daily, 7.0°C Feb. 12.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>23... | 1515 | 980 | 150 | 7.5 | 23.5 | 60 | 12 | 8.0 | 92 | 1.2 | 130 | 31 |
| NOV<br>14... | 1710 | 1420 | 134 | 7.3 | 14.5 | 80 | 12 | 11.1 | 106 | .7 | K18 | K6 |
| JAN<br>16... | 1120 | 5860 | 129 | 6.8 | 13.0 | 70 | 19 | 12.0 | 113 | 1.0 | 38 | 24 |
| FEB<br>26... | 1530 | 17100 | 139 | 7.1 | 13.0 | 40 | 16 | 11.6 | 107 | 1.8 | 50 | 36 |
| MAR<br>25... | 1230 | 10800 | 106 | 6.9 | 15.5 | 100 | 28 | 9.6 | 94 | 1.8 | 88 | 66 |
| APR<br>30... | 1030 | 24300 | 134 | 6.5 | 18.0 | 40 | 23 | 8.2 | 87 | 1.4 | 110 | 40 |
| MAY<br>29... | 1215 | 26300 | 144 | 6.5 | 24.5 | 50 | 31 | 8.6 | 101 | .5 | 84 | 120 |
| JUN<br>25... | 1250 | 3450 | 142 | 6.9 | 29.0 | 50 | 21 | 6.9 | 88 | 1.1 | 42 | 24 |
| JUL<br>30... | 1235 | 2220 | 158 | 6.8 | 29.5 | 30 | 17 | 6.8 | 88 | .2 | 60 | 44 |
| AUG<br>27... | 1435 | 1860 | 160 | 6.9 | 29.0 | 40 | 11 | 6.9 | 88 | 1.0 | 32 | 36 |
| SEP<br>16... | 1205 | 1050 | 196 | 7.1 | 30.0 | 45 | 6.8 | 7.0 | 92 | .6 | 60 | 40 |

| DATE | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>23... | 28 | 0 | 7.5 | 2.3 | 18 | 1.5 | 2.0 | 39 | 0 | 15 | 14 |
| NOV<br>14... | 20 | 0 | 5.7 | 1.5 | 18 | 1.7 | 2.2 | 25 | 0 | 17 | 15 |
| JAN<br>16... | 26 | 10 | 6.5 | 2.3 | 13 | 1.1 | 2.3 | 19 | 0 | 14 | 18 |
| FEB<br>26... | 29 | 1 | 7.6 | 2.5 | 16 | 1.3 | 2.4 | 34 | 0 | 16 | 18 |
| MAR<br>25... | 20 | 4 | 5.2 | 1.7 | 11 | 1.1 | 1.9 | 19 | 0 | 13 | 11 |
| APR<br>30... | 27 | 11 | 6.8 | 2.4 | 14 | 1.2 | 2.3 | 22 | 0 | 20 | 14 |
| MAY<br>29... | 29 | 12 | 7.3 | 2.6 | 16 | 1.3 | 2.8 | 21 | 0 | 17 | 21 |
| JUN<br>25... | 26 | 17 | 6.6 | 2.3 | 15 | 1.3 | 2.4 | 20 | 0 | 23 | 21 |
| JUL<br>30... | 30 | 10 | 7.1 | 3.0 | 17 | 1.3 | 2.9 | 25 | 0 | 18 | 24 |
| AUG<br>27... | 25 | 0 | 6.4 | 2.3 | 18 | 1.6 | 2.6 | 24 | 0 | 22 | 20 |
| SEP<br>16... | 30 | 5 | 7.8 | 2.5 | 23 | 1.8 | 2.7 | 35 | 0 | 26 | 23 |

## 08030500 SABINE RIVER NEAR RULIFF, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) | SOLIDS, VOLATILE, SUSPENDED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) | NITROGEN, AMMONIA TOTAL (MG/L AS N) | NITROGEN, AMMONIA DISSOLVED (MG/L AS N) | NITROGEN, ORGANIC TOTAL (MG/L AS N) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | .1 | 18 | 109 | 97 | 15 | 11 | .24 | .30 | .180 | .160 | 1.1 |
| NOV 14... | .1 | 15 | 102 | 87 | 20 | 16 | .06 | .06 | .050 | .040 | 1.3 |
| JAN 16... | .1 | 8.8 | 96 | 75 | 26 | 12 | .04 | .12 | .100 | .000 | .53 |
| FEB 26... | .1 | 6.3 | 78 | 86 | 20 | 11 | .10 | .07 | .000 | .010 | .69 |
| MAR 25... | .1 | 7.9 | 80 | 62 | 39 | 11 | .08 | .08 | .120 | .100 | .87 |
| APR 30... | .2 | 6.6 | 95 | 78 | 25 | 13 | .06 | .09 | .100 | .060 | .53 |
| MAY 29... | .1 | 7.4 | 96 | 84 | 50 | 8 | .10 | .07 | .100 | .040 | .70 |
| JUN 25... | .0 | 11 | 104 | 88 | 19 | 0 | .00 | .12 | .060 | .050 | .77 |
| JUL 30... | .2 | 10 | 102 | 95 | 29 | 30 | .00 | .02 | .050 | .030 | .92 |
| AUG 27... | .1 | 9.6 | 107 | 93 | 19 | 0 | .00 | .00 | .350 | .000 | .75 |
| SEP 16... | .1 | 13 | 132 | 114 | 8 | 0 | .07 | .07 | .020 | -- | .38 |

| DATE | NITROGEN, ORGANIC DISSOLVED (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | PHOSPHORUS, DISSOLVED (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | CARBON, ORGANIC DISSOLVED (MG/L AS C) | CARBON, ORGANIC SUSPENDED (MG/L AS C) | SEDIMENT, SUSPENDED (MG/L) | SEDIMENT DISCHARGE, SUSPENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | .38 | 1.3 | .54 | .050 | .030 | 5.5 | -- | -- | 12 | 32 | 93 |
| NOV 14... | .85 | 1.3 | .89 | .040 | .010 | 10 | -- | -- | 15 | 58 | 66 |
| JAN 16... | .55 | .63 | .55 | .040 | .030 | -- | 9.4 | 1.3 | 28 | 443 | 82 |
| FEB 26... | .33 | .69 | .34 | .040 | .020 | 7.9 | -- | -- | 24 | 1110 | 70 |
| MAR 25... | .48 | .99 | .58 | .060 | .010 | -- | 7.9 | 1.2 | 43 | 1250 | 81 |
| APR 30... | .64 | .63 | .70 | .040 | .010 | 8.9 | -- | -- | 37 | 2430 | 77 |
| MAY 29... | .39 | .80 | .43 | .300 | .010 | 8.2 | -- | -- | 40 | 2840 | 75 |
| JUN 25... | .43 | .83 | .48 | .040 | .000 | -- | 20 | .8 | 109 | 1020 | 84 |
| JUL 30... | .43 | .97 | .46 | .050 | .020 | 7.0 | -- | -- | 46 | 276 | 82 |
| AUG 27... | .42 | 1.1 | .42 | .050 | .030 | 5.5 | -- | -- | 28 | 141 | 84 |
| SEP 16... | -- | .40 | -- | .040 | .020 | -- | 5.5 | 1.0 | 15 | 43 | 81 |

| DATE | TIME | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUSPENDED TOTAL (UG/L AS AS) | ARSENIC DISSOLVED (UG/L AS AS) | BARIUM, TOTAL RECOVERABLE (UG/L AS BA) | BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) | BARIUM, DISSOLVED (UG/L AS BA) | CADMIUM TOTAL RECOVERABLE (UG/L AS CD) | CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) | CADMIUM DISSOLVED (UG/L AS CD) | CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 14... | 1710 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 16... | 1120 | 1 | 1 | 0 | 0 | 0 | 30 | 1 | 0 | 29 | 0 |
| FEB 26... | 1530 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 25... | 1230 | 1 | 1 | 0 | 100 | 60 | 40 | 3 | 0 | 5 | 20 |
| MAY 29... | 1215 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 25... | 1230 | 2 | 1 | 1 | 0 | 0 | 50 | 1 | 0 | 1 | 0 |
| AUG 27... | 1435 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 16... | 1205 | 2 | 1 | 1 | 100 | 40 | 60 | 2 | 0 | 2 | 10 |

## 08030500 SABINE RIVER NEAR RULIFF, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) | CHROMIUM, DISSOLVED (UG/L AS CR) | COBALT, TOTAL RECOVERABLE (UG/L AS CO) | COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) | COBALT, DISSOLVED (UG/L AS CO) | COPPER, TOTAL RECOVERABLE (UG/L AS CU) | COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) | COPPER, DISSOLVED (UG/L AS CU) | IRON, TOTAL RECOVERABLE (UG/L AS FE) | IRON, SUSPENDED RECOVERABLE (UG/L AS FE) | IRON, DISSOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 14... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 16... | 0 | 0 | 0 | 0 | <3 | 5 | 3 | 2 | 840 | 740 | 100 |
| FEB 26... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 25... | 20 | 0 | 2 | 0 | <3 | 8 | 6 | 2 | 1200 | 1000 | 190 |
| MAY 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 25... | 0 | 10 | 0 | -- | <3 | 10 | 5 | 5 | 870 | 700 | 170 |
| AUG 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 16... | 10 | 0 | 1 | -- | <3 | 5 | 2 | 3 | 960 | 500 | 460 |

| DATE | LEAD, TOTAL RECOVERABLE (UG/L AS PB) | LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) | MANGANESE, SUSPENDED RECOV. (UG/L AS MN) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY TOTAL RECOVERABLE (UG/L AS HG) | MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) | MERCURY DISSOLVED (UG/L AS HG) | NICKEL, TOTAL RECOVERABLE (UG/L AS NI) | NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 14... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 16... | 76 | 41 | 35 | 100 | 60 | 40 | .0 | .0 | .0 | 9 | 4 |
| FEB 26... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 25... | 26 | 0 | 36 | 70 | 30 | 40 | .1 | .1 | .0 | 6 | 5 |
| MAY 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 25... | 40 | 33 | 7 | 120 | 90 | 30 | .1 | .0 | .1 | 0 | 0 |
| AUG 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 16... | 8 | 6 | 2 | 100 | 40 | 60 | .3 | .3 | .0 | 4 | 0 |

| DATE | NICKEL, DISSOLVED (UG/L AS NI) | SELENIUM, TOTAL (UG/L AS SE) | SELENIUM, SUSPENDED TOTAL (UG/L AS SE) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, TOTAL RECOVERABLE (UG/L AS AG) | SILVER, SUSPENDED RECOVERABLE (UG/L AS AG) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, TOTAL RECOVERABLE (UG/L AS ZN) | ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|---|---|---|
| NOV 14... | -- | -- | -- | -- | 1 | -- | -- | -- | -- | -- |
| JAN 16... | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 170 | 170 | <3 |
| FEB 26... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| MAR 25... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 30 | 5 |
| MAY 29... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| JUN 25... | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 30 | 4 |
| AUG 27... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| SEP 16... | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 10 | 10 |

| DATE | TIME | GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT) | GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) | GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) | GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) | GROSS BETA, DISSOLVED (PCI/L AS CS-137) | GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) | GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90) | GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) | RADIUM 226, DISSOLVED, RADON METHOD (PCI/L) | URANIUM DISSOLVED, EXTRACTION (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | 1515 | <1.0 | <.5 | <1.5 | <.7 | 2.5 | <.5 | 2.4 | <.6 | .03 | .21 |
| AUG 27... | 1435 | <1.0 | .3 | <1.5 | .5 | 3.9 | <.4 | 3.8 | <.4 | .06 | .14 |

## 08030500 SABINE RIVER NEAR RULIFF, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | PCB, TOTAL (UG/L) | PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | CHLORDANE, TOTAL (UG/L) | CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV<br>14... | 1710 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| FEB<br>26... | 1530 | ND | -- | ND | -- | ND | -- | ND | -- | ND | -- |

| DATE | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) | DIAZINON, TOTAL (UG/L) | DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) | DIELDRIN TOTAL (UG/L) | DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | ETHION, TOTAL (UG/L) | ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) | HEPTACHLOR, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV<br>14... | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| FEB<br>26... | ND | -- | ND | -- | ND | -- | ND | -- | ND | -- | ND |

| DATE | HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) | HEPTACHLOR EPOXIDE TOTAL (UG/L) | HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) | MALATHION, TOTAL (UG/L) | MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) | METHOXYCHLOR, TOTAL (UG/L) | METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) | METHYL PARATHION, TOTAL (UG/L) | METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV<br>14... | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| FEB<br>26... | -- | ND | -- | ND | -- | ND | -- | ND | -- | ND | -- |

| DATE | METHYL TRITHION, TOTAL (UG/L) | METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) | PARATHION, TOTAL (UG/L) | PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) | TOXAPHENE, TOTAL (UG/L) | TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) | TOTAL TRITHION (UG/L) | TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) | 2,4-D, TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) | SILVEX, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV<br>14... | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| FEB<br>26... | ND | -- | ND | -- | ND | -- | ND | -- | -- | -- | -- |

## PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| | | | | |
|---|---|---|---|---|
| DATE | NOV 14,79 | MAR 25,80 | MAY 29,80 | JUN 25,80 |
| TIME | 1710 | 1230 | 1215 | 1250 |
| TOTAL CELLS/ML | 50 | 260 | 2400 | 1300 |
| DIVERSITY: DIVISION | 1.2 | 1.6 | 1.3 | 1.3 |
| .CLASS | 1.2 | 1.6 | 1.3 | 1.3 |
| ..ORDER | 1.2 | 1.8 | 2.4 | 1.9 |
| ...FAMILY | 1.8 | 2.3 | 2.7 | 2.2 |
| ....GENUS | 1.8 | 2.3 | 3.0 | 2.5 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | | | |
| .CHLOROPHYCEAE | | | | | | | | |
| ..CHLOROCOCCALES | | | | | | | | |
| ...COELASTRACEAE | | | | | | | | |
| ....COELASTRUM | -- | - | -- | - | -- | - | 100 | 8 |
| ...OOCYSTACEAE | | | | | | | | |
| ....ANKISTRODESMUS | -- | - | 26 | 10 | 760# | 32 | 51 | 4 |
| ....CHLORELLA | 10# | 20 | -- | - | -- | - | -- | - |
| ....DICTYOSPHAERIUM | -- | - | -- | - | 170 | 7 | -- | - |
| ....KIRCHNERIELLA | -- | - | -- | - | 14 | 1 | -- | - |
| ....SELENASTRUM | -- | - | -- | - | -- | - | -- | - |
| ....TETRAEDRON | -- | - | -- | - | -- | - | -- | - |
| ...SCENEDESMACEAE | | | | | | | | |
| ....CRUCIGENIA | -- | - | -- | - | -- | - | 51 | 4 |
| ....SCENEDESMUS | -- | - | 52# | 20 | 110 | 5 | 77 | 6 |
| ....TETRASTRUM | -- | - | -- | - | -- | - | 51 | 4 |
| ..TETRASPORALES | | | | | | | | |
| ...PALMELLACEAE | | | | | | | | |
| ....SPHAEROCYSTIS | -- | - | -- | - | 290 | 12 | -- | - |
| ..VOLVOCALES | | | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | | | |
| ....CHLAMYDOMONAS | -- | - | -- | - | 100 | 4 | 26 | 2 |
| ..ZYGNEMATALES | | | | | | | | |
| ...DESMIDIACEAE | | | | | | | | |
| ....COSMARIUM | -- | - | -- | - | 29 | 1 | -- | - |
| CHRYSOPHYTA | | | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | | | |
| ..CENTRALES | | | | | | | | |
| ...COSCINODISCACEAE | | | | | | | | |
| ....CYCLOTELLA | -- | - | -- | - | 14 | 1 | 13 | 1 |
| ....MELOSIRA | -- | - | 26 | 10 | 200 | 8 | -- | - |
| ..PENNALES | | | | | | | | |
| ...ACHNANTHACEAE | | | | | | | | |
| ....ACHNANTHES | -- | - | -- | - | 29 | 1 | -- | - |
| ...CYMBELLACEAE | | | | | | | | |
| ....AMPHORA | -- | - | 13 | 5 | -- | - | -- | - |
| ...FRAGILARIACEAE | | | | | | | | |
| ....FRAGILARIA | -- | - | -- | - | -- | - | -- | - |
| ...NAVICULACEAE | | | | | | | | |
| ....NAVICULA | 20# | 40 | -- | - | 14 | 1 | -- | - |
| ...NITZSCHIACEAE | | | | | | | | |
| ....NITZSCHIA | 15# | 30 | 39 | 15 | 72 | 3 | 130 | 10 |
| .XANTHOPHYCEAE | | | | | | | | |
| ..HETEROCOCCALES | | | | | | | | |
| ...CHLOROTHECIACEAE | | | | | | | | |
| ....OPHIOCYTIUM | -- | - | -- | - | -- | - | -- | - |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | | | |
| .CRYPTOPHYCEAE | | | | | | | | |
| ..CRYPTOMONADALES | | | | | | | | |
| ...CRYPTOMONADACEAE | | | | | | | | |
| ....CRYPTOMONAS | 5 | 10 | -- | - | -- | - | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | | | |
| .CYANOPHYCEAE | | | | | | | | |
| ..CHROOCOCCALES | | | | | | | | |
| ...CHROOCOCCACEAE | | | | | | | | |
| ....AGMENELLUM | -- | - | -- | - | -- | - | -- | - |
| ....ANACYSTIS | -- | - | 100# | 40 | 290 | 12 | 640# | 50 |
| ..HORMOGONALES | | | | | | | | |
| ...OSCILLATORIACEAE | | | | | | | | |
| ....OSCILLATORIA | -- | - | -- | - | 290 | 12 | 150 | 12 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE<br>TIME | JUL 30,80<br>1235 | | AUG 27,80<br>1435 | | SEP 16,80<br>1205 | |
|---|---|---|---|---|---|---|
| TOTAL CELLS/ML | 1600 | | 1600 | | 300 | |
| DIVERSITY: DIVISION | 1.4 | | 1.3 | | 1.3 | |
| .CLASS | 1.4 | | 1.3 | | 1.5 | |
| ..ORDER | 1.7 | | 1.8 | | 1.6 | |
| ...FAMILY | 2.0 | | 2.2 | | 1.6 | |
| ....GENUS | 2.4 | | 2.5 | | 1.6 | |
| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...COELASTRACEAE | | | | | | |
| ....COELASTRUM | -- | - | -- | - | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | -- | - | -- | - | -- | - |
| ....CHLORELLA | -- | - | -- | - | -- | - |
| ....DICTYOSPHAERIUM | 150 | 10 | 540# | 33 | -- | - |
| ....KIRCHNERIELLA | -- | - | -- | - | -- | - |
| ....SELENASTRUM | 180 | 11 | 13 | 1 | -- | - |
| ....TETRAEDRON | 26 | 2 | 13 | 1 | 13 | 4 |
| ...SCENEDESMACEAE | | | | | | |
| ....CRUCIGENIA | 150 | 10 | -- | - | -- | - |
| ....SCENEDESMUS | -- | - | 180 | 11 | -- | - |
| ....TETRASTRUM | -- | - | -- | - | -- | - |
| ..TETRASPORALES | | | | | | |
| ...PALMELLACEAE | | | | | | |
| ....SPHAEROCYSTIS | -- | - | -- | - | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | 39 | 2 | 13 | 1 | 26 | 9 |
| ..ZYGNEMATALES | | | | | | |
| ...DESMIDIACEAE | | | | | | |
| ....COSMARIUM | -- | - | -- | - | -- | - |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 51 | 3 | -- | - | -- | - |
| ....MELOSIRA | 51 | 3 | -- | - | -- | - |
| ..PENNALES | | | | | | |
| ...ACHNANTHACEAE | | | | | | |
| ....ACHNANTHES | -- | - | -- | - | -- | - |
| ...CYMBELLACEAE | | | | | | |
| ....AMPHORA | -- | - | -- | - | -- | - |
| ...FRAGILARIACEAE | | | | | | |
| ....FRAGILARIA | 13 | 1 | -- | - | -- | - |
| ...NAVICULACEAE | | | | | | |
| ....NAVICULA | -- | - | 26 | 2 | -- | - |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 100 | 7 | 77 | 5 | 64# | 22 |
| .XANTHOPHYCEAE | | | | | | |
| ..HETEROCOCCALES | | | | | | |
| ...CHLOROTHECIACEAE | | | | | | |
| ....OPHIOCYTIUM | -- | - | -- | - | 13 | 4 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | -- | - | -- | - | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | -- | - | 100 | 6 | -- | - |
| ....ANACYSTIS | 810# | 51 | 440# | 27 | 180# | 61 |
| ..HORMOGONALES | | | | | | |
| ...OSCILLATORIACEAE | | | | | | |
| ....OSCILLATORIA | -- | - | 230 | 14 | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 08030500 SABINE RIVER NEAR RULIFF, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 68553 | 146 | 82 | 15200 | 19 | 3580 | 14 | 2680 | 29 |
| NOV. | 1979 | 91290 | 116 | 67 | 16500 | 15 | 3810 | 12 | 2940 | 24 |
| DEC. | 1979 | 276890 | 124 | 71 | 53400 | 17 | 12400 | 13 | 9510 | 25 |
| JAN. | 1980 | 300870 | 106 | 62 | 50100 | 14 | 11500 | 11 | 8970 | 22 |
| FEB. | 1980 | 476500 | 116 | 67 | 86400 | 15 | 19900 | 12 | 15500 | 24 |
| MAR. | 1980 | 395860 | 116 | 67 | 71700 | 15 | 16500 | 12 | 12800 | 24 |
| APR. | 1980 | 641400 | 105 | 62 | 107000 | 14 | 24400 | 11 | 19200 | 22 |
| MAY | 1980 | 650190 | 115 | 66 | 116000 | 15 | 26800 | 12 | 20800 | 23 |
| JUNE | 1980 | 131990 | 156 | 86 | 30800 | 21 | 7310 | 15 | 5420 | 30 |
| JULY | 1980 | 98750 | 163 | 90 | 23900 | 21 | 5710 | 16 | 4200 | 31 |
| AUG. | 1980 | 89700 | 173 | 94 | 22800 | 23 | 5510 | 16 | 3970 | 33 |
| SEPT | 1980 | 75778 | 167 | 92 | 18800 | 22 | 4500 | 16 | 3290 | 32 |
| TOTAL | | 3297771 | ** | ** | 613000 | ** | 142000 | ** | 109000 | ** |
| WTD. AVG. | | 9010 | 120 | 69 | ** | 16 | ** | 12 | ** | 24 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 139 | 143 | 139 | 135 | 116 | 140 | 62 | 130 | 133 | 171 | 142 | 170 |
| 2 | 140 | 117 | 141 | 139 | 118 | 138 | 63 | 131 | 136 | 156 | 153 | 161 |
| 3 | 141 | 75 | 141 | 142 | 127 | 123 | 64 | 126 | 132 | 168 | 156 | 160 |
| 4 | 135 | 99 | 148 | 145 | 128 | 125 | 72 | 117 | 137 | 157 | 152 | 167 |
| 5 | 132 | 111 | 149 | 146 | 131 | 129 | 85 | 124 | 161 | 158 | 160 | 171 |
| 6 | 152 | 142 | 150 | 144 | 129 | 135 | 98 | 122 | 160 | 161 | 162 | 156 |
| 7 | 173 | 157 | 153 | 142 | 128 | 136 | 111 | 129 | 168 | 158 | 158 | 159 |
| 8 | 199 | 176 | 157 | 144 | 133 | 135 | 121 | 139 | 159 | 155 | 159 | 161 |
| 9 | 225 | 194 | 150 | 142 | 142 | 134 | 120 | 127 | 165 | 169 | 161 | 163 |
| 10 | 194 | 183 | 154 | 140 | 112 | 138 | 118 | 157 | 146 | 170 | 179 | 171 |
| 11 | 183 | 184 | 155 | 132 | 87 | 142 | 126 | 155 | 158 | 160 | 188 | 173 |
| 12 | 186 | 166 | 150 | 129 | 73 | 138 | 146 | 156 | 180 | 163 | 184 | 153 |
| 13 | 176 | 151 | 135 | 124 | 66 | 136 | 125 | 151 | 158 | 160 | 180 | 159 |
| 14 | 173 | 132 | 115 | 121 | 67 | 133 | 68 | 144 | 165 | 159 | 199 | 161 |
| 15 | 167 | 125 | 71 | 128 | 83 | 132 | 71 | 142 | 169 | 156 | 226 | 172 |
| 16 | 163 | 135 | 96 | 123 | 102 | 134 | 81 | 124 | 168 | 157 | 234 | 190 |
| 17 | 157 | 145 | 99 | 118 | 110 | 129 | 89 | 57 | 161 | 164 | 265 | 206 |
| 18 | 156 | 154 | 110 | 122 | 120 | 133 | 99 | 40 | 166 | 159 | 195 | 187 |
| 19 | 149 | 155 | 118 | 124 | 121 | 127 | 109 | 64 | 196 | 160 | 197 | 220 |
| 20 | 153 | 158 | 136 | 125 | 123 | 73 | 115 | 71 | 151 | 161 | 198 | 170 |
| 21 | 150 | 166 | 132 | 101 | 124 | 92 | 118 | 88 | 166 | 163 | 230 | 180 |
| 22 | 152 | 147 | 120 | 94 | 128 | 101 | 121 | 104 | 161 | 153 | 192 | 194 |
| 23 | 150 | 136 | 115 | 80 | 131 | 90 | 122 | 115 | 155 | 157 | 182 | 178 |
| 24 | 147 | 109 | 112 | 50 | 135 | 102 | 127 | 125 | 153 | 175 | 161 | 172 |
| 25 | 134 | 79 | 121 | 54 | 138 | 103 | 136 | 131 | 142 | 168 | 176 | 161 |
| 26 | 108 | 65 | 95 | 58 | 142 | 113 | 130 | 137 | 151 | 171 | 166 | 160 |
| 27 | 109 | 80 | 87 | 61 | 145 | 116 | 123 | 141 | 164 | 170 | 162 | 162 |
| 28 | 125 | 101 | 88 | 70 | 142 | 104 | 133 | 142 | 169 | 167 | 151 | 165 |
| 29 | 140 | 123 | 112 | 76 | 141 | 85 | 134 | 145 | 171 | 163 | 145 | 169 |
| 30 | 154 | 141 | 120 | 95 | --- | 71 | 128 | 147 | 173 | 158 | 155 | 162 |
| 31 | 147 | --- | 131 | 114 | --- | 61 | --- | 139 | --- | 155 | 161 | --- |
| MEAN | 155 | 135 | 126 | 113 | 119 | 118 | 107 | 123 | 159 | 162 | 178 | 171 |

## 08030500 SABINE RIVER NEAR RULIFF, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 23.0 | 19.0 | 13.0 | 11.0 | 10.0 | 12.0 | 16.0 | 17.0 | 25.0 | 30.0 | 30.0 | 28.0 |
| 2 | 23.0 | 19.0 | 13.0 | 12.0 | 10.0 | 11.0 | 16.0 | 17.0 | 25.0 | 30.0 | 29.0 | 28.0 |
| 3 | 24.0 | 19.0 | 12.0 | 11.0 | 9.0 | 11.0 | 17.0 | 18.0 | 25.0 | 30.0 | 29.0 | 28.0 |
| 4 | 24.0 | 20.0 | 13.0 | 11.0 | 9.0 | 10.0 | 17.0 | 19.0 | 26.0 | 31.0 | 30.0 | 28.0 |
| 5 | 22.0 | 20.0 | 13.0 | 11.0 | 10.0 | 10.0 | 18.0 | 20.0 | 26.0 | 30.0 | 30.0 | 29.0 |
| 6 | 22.0 | 16.0 | 13.0 | 11.0 | 9.0 | 11.0 | 17.0 | 22.0 | 26.0 | 31.0 | 30.0 | 29.0 |
| 7 | 26.0 | 16.0 | 12.0 | 10.0 | 9.0 | 11.0 | 17.0 | 21.0 | 27.0 | 31.0 | 29.0 | --- |
| 8 | 23.0 | 20.0 | 12.0 | 10.0 | 9.0 | 11.0 | 18.0 | 22.0 | 27.0 | 31.0 | 29.0 | 29.0 |
| 9 | 23.0 | 20.0 | 11.0 | 10.0 | 9.0 | 13.0 | 18.0 | 22.0 | 27.0 | 31.0 | 28.0 | 28.0 |
| 10 | 23.0 | 18.0 | 12.0 | 10.0 | 9.0 | 13.0 | 18.0 | 22.0 | 26.0 | 31.0 | 29.0 | 28.0 |
| 11 | 22.0 | 17.0 | 12.0 | 10.0 | 10.0 | 14.0 | 18.0 | --- | 26.0 | 31.0 | 29.0 | 28.0 |
| 12 | 22.0 | 15.0 | 14.0 | 12.0 | 7.0 | 15.0 | 19.0 | 23.0 | 26.0 | 31.0 | 29.0 | 28.0 |
| 13 | 22.0 | 15.0 | 13.0 | 11.0 | 8.0 | 16.0 | 19.0 | 23.0 | 26.0 | --- | 29.0 | 28.0 |
| 14 | 22.0 | 15.0 | 14.0 | 12.0 | 9.0 | 16.0 | 19.0 | 23.0 | 27.0 | 31.0 | 29.0 | 29.0 |
| 15 | 22.0 | 13.0 | --- | 13.0 | 10.0 | 15.0 | 17.0 | 23.0 | 27.0 | 31.0 | 30.0 | 29.0 |
| 16 | 22.0 | 14.0 | 13.0 | 12.0 | 9.0 | 17.0 | 16.0 | 24.0 | 27.0 | 31.0 | 30.0 | 29.0 |
| 17 | 22.0 | 16.0 | 12.0 | 11.0 | --- | 18.0 | 17.0 | 24.0 | 28.0 | 31.0 | 30.0 | 29.0 |
| 18 | 22.0 | 16.0 | 12.0 | 14.0 | 8.0 | 16.0 | 17.0 | 21.0 | 28.0 | 31.0 | 30.0 | 28.0 |
| 19 | 22.0 | 16.0 | 12.0 | 14.0 | 8.0 | 16.0 | 17.0 | 22.0 | 28.0 | 31.0 | 29.0 | 28.0 |
| 20 | 23.0 | 16.0 | 10.0 | 15.0 | --- | 17.0 | 17.0 | 22.0 | 28.0 | 30.0 | 29.0 | 29.0 |
| 21 | 23.0 | 16.0 | 11.0 | 18.0 | 9.0 | 17.0 | --- | 22.0 | 28.0 | 29.0 | 29.0 | 29.0 |
| 22 | 24.0 | 17.0 | 14.0 | 15.0 | --- | 15.0 | 18.0 | 23.0 | 28.0 | 29.0 | 29.0 | 29.0 |
| 23 | 26.0 | 15.0 | 12.0 | --- | 14.0 | 15.0 | 18.0 | 23.0 | 28.0 | 29.0 | 29.0 | 29.0 |
| 24 | 21.0 | 15.0 | 13.0 | 12.0 | 15.0 | 16.0 | 19.0 | 22.0 | 28.0 | 29.0 | 29.0 | 28.0 |
| 25 | 21.0 | 13.0 | 13.0 | 12.0 | 14.0 | 15.0 | 17.0 | 23.0 | 28.0 | 29.0 | 29.0 | 28.0 |
| 26 | 18.0 | 14.0 | 13.0 | 11.0 | 13.0 | 16.0 | --- | 23.0 | 29.0 | 29.0 | 30.0 | 28.0 |
| 27 | 20.0 | --- | 13.0 | 11.0 | 12.0 | 15.0 | 18.0 | 24.0 | 29.0 | 29.0 | 30.0 | 27.0 |
| 28 | 20.0 | 14.0 | 13.0 | 11.0 | 12.0 | 15.0 | 18.0 | 24.0 | 29.0 | 30.0 | 30.0 | 27.0 |
| 29 | 19.0 | 14.0 | 13.0 | 11.0 | 12.0 | --- | 19.0 | 24.0 | 28.0 | 30.0 | 28.0 | 27.0 |
| 30 | 19.0 | 13.0 | 12.0 | 12.0 | --- | 15.0 | 18.0 | 25.0 | --- | 29.0 | 27.0 | 27.0 |
| 31 | 23.0 | --- | 12.0 | 13.0 | --- | 15.0 | --- | 25.0 | --- | 29.0 | 28.0 | --- |
| MEAN | 22.0 | 16.0 | 12.5 | 12.0 | 10.0 | 14.0 | 17.5 | 22.0 | 27.0 | 30.0 | 29.0 | 28.0 |

## 08031000 COW BAYOU NEAR MAURICEVILLE, TX

LOCATION.--Lat 30°11'10", long 93°54'30", Orange County, Hydrologic Unit 12010005, near center of span at downstream side of bridge on State Highway 12, 0.4 mi (0.6 km) upstream from Kansas City Southern Railway Co. bridge, and 2.7 mi (4.3 km) southwest of Mauriceville.

DRAINAGE AREA.--83.3 $mi^2$ (215.7 $km^2$).

PERIOD OF RECORD.--March 1952 to current year (October 1956 to September 1957, monthly discharge only).
Water-quality records: Sediment records: October 1976 to September 1979.

REVISED RECORD.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4.73 ft (1.442 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 23, 1957, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for period of no gage-height record, which are poor. No large diversion above station. Base flow is partly sustained by springs.

AVERAGE DISCHARGE.--28 years, 102 $ft^3/s$ (2.889 $m^3/s$), 16.63 in/yr (422 mm/yr), 73,900 acre-ft/yr (91.1 $hm^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,600 $ft^3/s$ (130 $m^3/s$) Sept. 19, 1963, gage height, 18.15 ft (5.532 m); no flow at times.
Maximum stage since at least 1940, 18.16 ft (5.535 m) Oct. 28, 1970.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 900 $ft^3/s$ (25.5 $m^3/s$) and maximum (*):

| Date | Time | Discharge ($ft^3/s$) | Discharge ($m^3/s$) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| Jan. 25 | 1700 | 1,460 | 41.3 | 14.36 | 4.377 |
| Mar. 30 | 2200 | 1,350 | 38.2 | 13.99 | 4.264 |
| May 19 | 1400 | *2,220 | 62.9 | 15.99 | 4.874 |

Minimum discharge, 0.03 $ft^3/s$ (0.001 $m^3/s$) Sept. 21-26, 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 17 | 198 | 82 | 136 | 198 | 29 | 1260 | 7.6 | 6.4 | .09 | .66 | .12 |
| 2 | 11 | 170 | 55 | 108 | 153 | 43 | 1100 | 6.5 | 4.3 | .10 | .55 | .12 |
| 3 | 7.1 | 158 | 37 | 215 | 124 | 52 | 904 | 7.7 | 3.1 | .08 | .45 | .11 |
| 4 | 5.1 | 155 | 26 | 261 | 96 | 60 | 576 | 52 | 2.3 | .08 | .40 | .10 |
| 5 | 3.4 | 141 | 19 | 200 | 86 | 65 | 305 | 74 | 1.7 | .08 | .45 | 22 |
| 6 | 2.5 | 108 | 14 | 168 | 98 | 58 | 189 | 46 | 1.3 | .10 | .50 | 166 |
| 7 | 1.9 | 68 | 12 | 143 | 80 | 51 | 111 | 23 | 1.1 | .08 | .45 | 28 |
| 8 | 1.6 | 43 | 9.1 | 116 | 108 | 44 | 70 | 11 | .84 | .09 | .40 | 3.4 |
| 9 | 1.2 | 34 | 7.2 | 99 | 608 | 37 | 42 | 5.7 | .68 | .08 | .35 | 1.5 |
| 10 | 1.0 | 29 | 5.7 | 88 | 612 | 32 | 27 | 3.4 | .57 | .10 | .30 | .98 |
| 11 | .84 | 21 | 5.0 | 106 | 720 | 26 | 19 | 2.3 | .37 | .13 | .25 | .57 |
| 12 | .71 | 15 | 19 | 112 | 770 | 23 | 28 | 1.7 | .30 | .11 | .20 | .32 |
| 13 | .57 | 11 | 213 | 116 | 724 | 20 | 116 | 1.4 | .13 | .08 | .15 | .17 |
| 14 | .47 | 8.4 | 279 | 124 | 573 | 16 | 191 | 2.6 | .09 | .06 | .12 | .08 |
| 15 | .40 | 6.7 | 248 | 123 | 405 | 12 | 324 | 63 | .08 | .05 | .10 | .06 |
| 16 | .39 | 5.4 | 277 | 111 | 301 | 10 | 432 | 436 | .07 | .05 | .09 | .05 |
| 17 | .33 | 4.3 | 301 | 154 | 227 | 22 | 414 | 1200 | .08 | .05 | .09 | .05 |
| 18 | .32 | 3.5 | 280 | 173 | 175 | 64 | 384 | 1740 | .06 | .05 | .08 | .05 |
| 19 | .32 | 2.8 | 239 | 122 | 154 | 135 | 247 | 2150 | .06 | .05 | .08 | .04 |
| 20 | .28 | 2.5 | 188 | 256 | 143 | 198 | 134 | 1980 | .08 | .05 | .07 | .04 |
| 21 | .26 | 2.2 | 136 | 585 | 129 | 225 | 59 | 1610 | .13 | .06 | .07 | .03 |
| 22 | 2.1 | 56 | 97 | 980 | 108 | 222 | 33 | 1310 | .20 | .08 | .07 | .03 |
| 23 | 2.6 | 410 | 106 | 1310 | 83 | 226 | 20 | 1030 | .16 | .06 | .06 | .03 |
| 24 | 1.5 | 296 | 214 | 1420 | 63 | 222 | 14 | 758 | .13 | .05 | .06 | .03 |
| 25 | 1.0 | 263 | 173 | 1450 | 49 | 175 | 9.6 | 436 | .11 | .06 | .05 | .03 |
| 26 | .96 | 250 | 171 | 1390 | 37 | 197 | 8.5 | 287 | .11 | .06 | .05 | .03 |
| 27 | .83 | 234 | 200 | 1220 | 28 | 819 | 8.4 | 193 | .08 | .06 | .06 | .04 |
| 28 | .63 | 205 | 223 | 999 | 22 | 1080 | 7.2 | 97 | .08 | 1.4 | .08 | .03 |
| 29 | .57 | 168 | 236 | 719 | 18 | 1160 | 7.7 | 44 | .09 | .98 | .08 | .05 |
| 30 | 7.3 | 124 | 218 | 393 | --- | 1330 | 9.0 | 19 | .10 | .86 | .08 | 78 |
| 31 | 299 | --- | 176 | 280 | --- | 1340 | --- | 10 | --- | .76 | .10 | --- |
| TOTAL | 373.18 | 3192.8 | 4266.0 | 13677 | 6892 | 7993 | 7049.4 | 13607.9 | 24.80 | 5.99 | 6.50 | 302.06 |
| MEAN | 12.0 | 106 | 138 | 441 | 238 | 258 | 235 | 439 | .83 | .19 | .21 | 10.1 |
| MAX | 299 | 410 | 301 | 1450 | 770 | 1340 | 1260 | 2150 | 6.4 | 1.4 | .66 | 166 |
| MIN | .26 | 2.2 | 5.0 | 88 | 18 | 10 | 7.2 | 1.4 | .06 | .05 | .05 | .03 |
| CFSM | .14 | 1.27 | 1.66 | 5.29 | 2.86 | 3.10 | 2.82 | 5.27 | .01 | .002 | .003 | .12 |
| IN. | .17 | 1.43 | 1.91 | 6.11 | 3.08 | 3.57 | 3.15 | 6.08 | .01 | .00 | .00 | .13 |
| AC-FT | 740 | 6330 | 8460 | 27130 | 13670 | 15850 | 13980 | 26990 | 49 | 12 | 13 | 599 |

CAL YR 1979 TOTAL 87921.03 MEAN 241 MAX 3680 MIN .13 CFSM 2.89 IN 39.26 AC-FT 174400
WTR YR 1980 TOTAL 57390.63 MEAN 157 MAX 2150 MIN .03 CFSM 1.89 IN 25.63 AC-FT 113800

NOTE.--No gage-height record Aug. 2 to Sept. 3.

## 08031200 KICKAPOO CREEK NEAR BROWNSBORO, TX

LOCATION.--Lat 32°18'34", long 95°36'19", Henderson County, Hydrologic Unit 12020001, on left bank 94 ft (29 m) downstream from bridge on Farm Road 314, 1.0 mi (1.6 km) northeast of Brownsboro, and 11.5 mi (18.5 km) upstream from mouth.

DRAINAGE AREA.--232 mi² (601 km²).

PERIOD OF RECORD.--April 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 358.62 ft (109.307 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those below 5.0 ft³/s (0.14 m³/s), which are poor. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--18 years (water years 1963-80), 138 ft³/s (3.908 m³/s), 8.07 in/yr (205 mm/yr), 99,980 acre-ft/yr (123 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 ft³/s (419 m³/s), Apr. 27, 1966, gage height, 14.79 ft (4.508 m); maximum gage height, 15.34 ft (4.676 m) May 11, 1968; no flow for many days.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1935, 16.4 ft (5.00 m) in 1936 or 1937, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,530 ft³/s (71.6 m³/s) Jan. 24 at 1100 hours, gage height, 10.93 ft (3.331 m), no other peak above base of 1,000 ft³/s (28.3 m³/s); no flow July 6 to Sept. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.4 | 16 | 14 | 110 | 154 | 61 | 377 | 168 | 18 | .02 | .00 | .25 |
| 2 | 3.9 | 13 | 13 | 93 | 132 | 60 | 429 | 145 | 16 | .01 | .00 | .20 |
| 3 | 2.2 | 14 | 13 | 88 | 119 | 60 | 337 | 136 | 14 | .01 | .00 | .15 |
| 4 | 1.4 | 13 | 13 | 82 | 107 | 60 | 261 | 126 | 12 | .01 | .00 | .12 |
| 5 | .80 | 9.6 | 13 | 78 | 97 | 59 | 185 | 101 | 11 | .01 | .00 | .08 |
| 6 | .47 | 7.1 | 13 | 75 | 90 | 57 | 131 | 80 | 9.2 | .00 | .00 | .06 |
| 7 | .33 | 6.0 | 14 | 71 | 84 | 56 | 106 | 64 | 7.2 | .00 | .00 | .04 |
| 8 | .26 | 4.9 | 14 | 65 | 113 | 56 | 89 | 51 | 6.5 | .00 | .00 | .03 |
| 9 | .24 | 4.4 | 14 | 61 | 278 | 56 | 76 | 42 | 5.4 | .00 | .00 | .02 |
| 10 | .23 | 3.8 | 14 | 57 | 410 | 56 | 67 | 38 | 5.2 | .00 | .00 | .01 |
| 11 | .22 | 3.4 | 15 | 54 | 640 | 56 | 63 | 35 | 4.4 | .00 | .00 | .00 |
| 12 | .16 | 3.7 | 22 | 50 | 774 | 59 | 70 | 40 | 3.2 | .00 | .00 | .00 |
| 13 | .16 | 5.4 | 46 | 48 | 588 | 59 | 188 | 67 | 2.2 | .00 | .00 | .00 |
| 14 | .18 | 7.3 | 71 | 47 | 408 | 59 | 510 | 78 | 1.8 | .00 | .00 | .00 |
| 15 | .21 | 7.9 | 83 | 45 | 341 | 57 | 495 | 105 | 1.1 | .00 | .00 | .00 |
| 16 | .33 | 8.2 | 84 | 45 | 272 | 57 | 845 | 514 | .50 | .00 | .00 | .00 |
| 17 | .44 | 8.2 | 73 | 44 | 212 | 58 | 702 | 569 | .35 | .00 | .00 | .00 |
| 18 | .62 | 9.1 | 55 | 44 | 164 | 61 | 477 | 420 | .26 | .00 | .00 | .00 |
| 19 | .84 | 12 | 42 | 46 | 135 | 66 | 339 | 377 | .18 | .00 | .00 | .00 |
| 20 | 1.1 | 15 | 35 | 53 | 116 | 90 | 244 | 339 | .14 | .00 | .00 | .00 |
| 21 | 1.3 | 19 | 31 | 74 | 105 | 209 | 165 | 230 | .10 | .00 | .00 | .00 |
| 22 | 1.7 | 19 | 41 | 284 | 97 | 271 | 108 | 138 | .08 | .00 | .00 | .00 |
| 23 | 2.2 | 21 | 143 | 1010 | 91 | 230 | 82 | 79 | .06 | .00 | .00 | .00 |
| 24 | 2.5 | 22 | 289 | 2330 | 85 | 158 | 73 | 51 | .05 | .00 | .00 | .00 |
| 25 | 2.4 | 24 | 359 | 1490 | 79 | 107 | 73 | 39 | .04 | .00 | .00 | .00 |
| 26 | 2.5 | 25 | 393 | 816 | 74 | 84 | 73 | 34 | .04 | .00 | .00 | .00 |
| 27 | 2.8 | 22 | 405 | 537 | 69 | 80 | 79 | 30 | .03 | .00 | .01 | .00 |
| 28 | 3.2 | 17 | 355 | 392 | 66 | 96 | 90 | 27 | .03 | .00 | .10 | .00 |
| 29 | 3.7 | 14 | 286 | 311 | 63 | 138 | 119 | 25 | .02 | .00 | .20 | .25 |
| 30 | 7.4 | 14 | 209 | 249 | --- | 196 | 161 | 22 | .02 | .00 | .30 | .81 |
| 31 | 11 | --- | 145 | 196 | --- | 240 | --- | 20 | --- | .00 | .30 | --- |
| TOTAL | 60.19 | 369.0 | 3317 | 8945 | 5963 | 3012 | 7014 | 4190 | 119.10 | .06 | .91 | 2.02 |
| MEAN | 1.94 | 12.3 | 107 | 289 | 206 | 97.2 | 234 | 135 | 3.97 | .002 | .029 | .067 |
| MAX | 11 | 25 | 405 | 2330 | 774 | 271 | 845 | 569 | 18 | .02 | .30 | .81 |
| MIN | .16 | 3.4 | 13 | 44 | 63 | 56 | 63 | 20 | .02 | .00 | .00 | .00 |
| CFSM | .008 | .05 | .46 | 1.25 | .89 | .42 | 1.01 | .58 | .02 | .000 | .000 | .000 |
| IN. | .01 | .06 | .53 | 1.43 | .96 | .48 | 1.12 | .67 | .02 | .00 | .00 | .00 |
| AC-FT | 119 | 732 | 6580 | 17740 | 11830 | 5970 | 13910 | 8310 | 236 | .1 | 1.8 | 4.0 |

CAL YR 1979 TOTAL 41424.47 MEAN 113 MAX 2970 MIN .00 CFSM .49 IN 6.64 AC-FT 82170
WTR YR 1980 TOTAL 32992.28 MEAN 90.1 MAX 2330 MIN .00 CFSM .39 IN 5.29 AC-FT 65440

## 08031290 LAKE ATHENS NEAR ATHENS, TX

**LOCATION.**--Lat 32°12'15", long 95°43'30", Henderson County, Hydrologic Unit 12020001, at upstream side of dam on Flat Creek, 5 mi (8 km) downstream from Underwood Lake, 8 mi (13 km) east of Athens, and 18 mi (29 km) upstream from Neches River.

**DRAINAGE AREA.**--21.6 mi² (55.9 km²).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1964 to current year. Prior to October 1972, published as Flat Creek Reservoir.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

**REMARKS.**--The lake is formed by a rolled earthfill dam 3,000 ft (910 m) long. Deliberate impoundment began Nov. 1, 1962, and the dam was completed in May 1963. The emergency spillway is an uncontrolled 300-foot-wide (91 m) channel cut through natural ground at the left end of the dam. The service spillway is an uncontrolled 6- by 6-foot (2 by 2 m) square drop inlet that is connected to a concrete conduit of the same size that extends through the dam. A 4.0- by 5.5-foot (1 by 1.7 m) inlet box with slide valve that connects to an 18-inch-diameter (457 mm) concrete conduit extends through the dam and serves as the low-flow service outlet. Water is used for municipal supply by the city of Athens. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam.................................................... | 453 + | - |
| Crest of spillway............................................. | 446.0 | 42,600 |
| Crest of drop inlet (top of conservation pool)................ | 440.0 | 32,790 |
| Normal operating level........................................ | 440.0 | 32,790 |
| Lowest gated outlet (invert).................................. | 396.5 | 100 |

**COOPERATION.**--The capacity table, furnished by the city of Athens, is based on Geological Survey topographic maps dated 1949-50.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 36,500 acre-ft (45.0 hm³) May 10, 1968, elevation, 442.37 ft (134.834 m); minimum since operating level was reached (May 7, 1968), 29,820 acre-ft (36.8 hm³) Nov. 13, 1978, and Sept. 28, 1980, elevation, 438.00 ft (133.502 m).

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 33,640 acre-ft (41.5 hm³) May 16 at 1500 to 2400 hours, elevation, 440.55 ft (134.280 m); minimum, 29,820 acre-ft (36.8 hm³) Sept. 28, elevation, 438.00 ft (133.502 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 438.0 | 29,820 | 440.0 | 32,790 |
| 439.0 | 31,290 | 441.0 | 34,340 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 32790 | 32570 | 32480 | 33180 | 33240 | 33050 | 33150 | 33180 | 32990 | 32320 | 31630 | 30510 |
| 2 | 32760 | 32570 | 32460 | 33180 | 33220 | 33070 | 33130 | 33240 | 32980 | 32290 | 31620 | 30510 |
| 3 | 32730 | 32550 | 32450 | 33180 | 33210 | 33050 | 33100 | 33240 | 32950 | 32260 | 31530 | 30480 |
| 4 | 32700 | 32540 | 32430 | 33160 | 33210 | 33090 | 33070 | 33240 | 32900 | 32230 | 31530 | 30450 |
| 5 | 32670 | 32490 | 32420 | 33160 | 33190 | 33050 | 33050 | 33240 | 32870 | 32220 | 31500 | 30420 |
| 6 | 32640 | 32480 | 32400 | 33160 | 33210 | 33050 | 33040 | 33240 | 32840 | 32200 | 31440 | 30350 |
| 7 | 32630 | 32480 | 32390 | 33150 | 33190 | 33050 | 33020 | 33240 | 32840 | 32190 | 31380 | 30360 |
| 8 | 32630 | 32450 | 32370 | 33150 | 33390 | 33040 | 33010 | 33100 | 32760 | 32170 | 31360 | 30330 |
| 9 | 32580 | 32450 | 32350 | 33130 | 33470 | 33040 | 32990 | 33070 | 32760 | 32160 | 31320 | 30320 |
| 10 | 32570 | 32430 | 32340 | 33130 | 33450 | 33050 | 32990 | 33050 | 32730 | 32140 | 31260 | 30320 |
| 11 | 32550 | 32400 | 32570 | 33120 | 33420 | 33020 | 33040 | 33050 | 32720 | 32070 | 31240 | 30330 |
| 12 | 32540 | 32420 | 32720 | 33100 | 33390 | 33120 | 33130 | 33220 | 32720 | 32010 | 31220 | 30300 |
| 13 | 32510 | 32390 | 32720 | 33090 | 33390 | 33090 | 33380 | 33300 | 32670 | 31960 | 31190 | 30260 |
| 14 | 32490 | 32390 | 32700 | 33090 | 33330 | 33070 | 33380 | 33300 | 32600 | 31920 | 31140 | 30220 |
| 15 | 32490 | 32370 | 32690 | 33100 | 33280 | 33070 | 33380 | 33610 | 32580 | 31870 | 31110 | 30190 |
| 16 | 32490 | 32370 | 32820 | 33100 | 33250 | 33090 | 33380 | 33640 | 32570 | 31840 | 31100 | 30170 |
| 17 | 32510 | 32370 | 32810 | 33100 | 33100 | 33050 | 33360 | 33550 | 32540 | 31830 | 31080 | 30130 |
| 18 | 32520 | 32390 | 32790 | 33090 | 33250 | 33050 | 33350 | 33480 | 32520 | 31830 | 31070 | 30100 |
| 19 | 32520 | 32420 | 32780 | 33090 | 33220 | 33040 | 33330 | 33440 | 32460 | 31830 | 31050 | 30050 |
| 20 | 32510 | 32420 | 32790 | 33130 | 33220 | 33010 | 33320 | 33380 | 32580 | 31830 | 31010 | 30040 |
| 21 | 32490 | 32540 | 32870 | 33220 | 33220 | 32990 | 33300 | 33330 | 32580 | 31860 | 30920 | 30040 |
| 22 | 32520 | 32540 | 33100 | 33480 | 33210 | 32990 | 33180 | 33300 | 32580 | 31830 | 30880 | 30030 |
| 23 | 32520 | 32540 | 33130 | 33450 | 33190 | 33020 | 33150 | 33250 | 32570 | 31830 | 30820 | 30000 |
| 24 | 32510 | 32510 | 33160 | 33440 | 33160 | 32980 | 33130 | 33210 | 32540 | 31830 | 30770 | 29940 |
| 25 | 32480 | 32490 | 33160 | 33390 | 33150 | 32960 | 33300 | 33190 | 32540 | 31800 | 30740 | 29910 |
| 26 | 32480 | 32510 | 33160 | 33360 | 33130 | 32950 | 33300 | 33180 | 32480 | 31780 | 30740 | 29880 |
| 27 | 32450 | 32520 | 33180 | 33330 | 33130 | 33090 | 33280 | 33180 | 32450 | 31780 | 30730 | 29850 |
| 28 | 32450 | 32520 | 33190 | 33320 | 33120 | 33090 | 33250 | 33150 | 32420 | 31740 | 30670 | 29820 |
| 29 | 32430 | 32510 | 33220 | 33300 | 33090 | 33160 | 33240 | 33100 | 32390 | 31710 | 30670 | 29970 |
| 30 | 32600 | 32490 | 33210 | 33300 | --- | 33150 | 33210 | 33070 | 32350 | 31660 | 30600 | 29950 |
| 31 | 32600 | --- | 33190 | 33250 | --- | 33150 | --- | 33020 | --- | 31630 | 30600 | --- |
| MAX | 32790 | 32570 | 33220 | 33480 | 33470 | 33160 | 33380 | 33640 | 32990 | 32320 | 31630 | 30510 |
| MIN | 32430 | 32370 | 32340 | 33090 | 33090 | 32950 | 32990 | 33020 | 32350 | 31630 | 30600 | 29820 |
| (†) | 439.87 | 439.80 | 440.26 | 440.30 | 440.19 | 440.23 | 440.27 | 440.15 | 439.71 | 439.23 | 438.53 | 438.09 |
| (‡) | -210 | -110 | +700 | +60 | -160 | +60 | +60 | -190 | -670 | -720 | -1030 | -650 |

CAL YR 1979 MAX 34650 MIN 31110 ‡ +2110
WTR YR 1980 MAX 33640 MIN 29820 ‡ -2860

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

## 08031290 LAKE ATHENS NEAR ATHENS, TX--Continued

### WATER-QUALITY RECORDS

**PERIOD OF RECORD.--Chemical analyses:** October 1975 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| JAN<br>10... | 1440 | 89 | 11.5 | 22 | 6 | 6.2 | 1.5 | 7.2 | .7 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| JAN<br>10... | 3.0 | 19 | 0 | 11 | 11 | .1 | 5.7 | 55 |

## 08031400 LAKE PALESTINE NEAR FRANKSTON, TX

LOCATION.--Lat 32°03'12", long 95°26'12", Anderson-Cherokee County line, Hydrologic Unit 12020001, in outlet tower near right bank, 140 ft (43 m) upstream from Blackburn Crossing Dam on Neches River, 5 mi (8 km) east of Frankston, 11 mi (18 km) upstream from gage (station 08032000), and at mile 354.0 (569.6 km).

DRAINAGE AREA.--839 mi² (2,173 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 20, 1962, nonrecording gage read once daily.

REMARKS.--The lake is formed by a rolled earthfill dam with a 500-foot-wide (150 m) uncontrolled emergency spillway near the left end of dam. Deliberate impoundment began May 1, 1962. The enlargement of lake began Sept. 26, 1969, and was completed on Mar. 3, 1971. The outlet works consist of two 5- by 7-foot (1.5 by 2.1 m) gates located in concrete tower near center of dam and connected to an 8.5-foot-diameter (2.6 m) concrete conduit through the dam. The low-flow outlet consists of two 3.0-foot (0.9 m) iron pipes connected to the tower structure for low-flow releases. Water is used for municipal and industrial purposes in the Palestine area. The diversion point is downstream from gage (station 08032000). There are no large diversions above station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam........................................................ | 364.0 | - |
| Design flood........................................................ | 355.3 | 726,000 |
| Crest of spillway (top of conservation pool).......................... | 345.0 | 412,000 |
| Lowest gated outlet (invert).......................................... | 298.0 | 550 |

COOPERATION.--The capacity table, furnished by the Upper Neches River Municipal Water Authority, is based on Geological Survey topographic maps dated 1946 and 1948-49.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 501,300 acre-ft (618 hm³) June 7, 1973, elevation, 348.29 ft (106.159 m); minimum since first appreciable storage, 11,450 acre-ft (14.1 hm³) Nov. 28, 1970, elevation, 310.00 ft (94.488 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 444,100 acre-ft (548 hm³) Jan. 26, elevation, 346.23 ft (105.531 m); minimum, 360,300 acre-ft (444 hm³) Sept. 28, 29, elevation, 342.90 ft (104.516 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 342.0 | 339,500 | 345.0 | 411,800 |
| 343.0 | 362,600 | 346.0 | 437,900 |
| 344.0 | 386,700 | 347.0 | 464,900 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 418300 | 410300 | 408300 | 421500 | 426700 | 421700 | 422800 | 420400 | 414900 | 401000 | 383100 | 366900 |
| 2 | 417000 | 411000 | 407800 | 421700 | 427700 | 416200 | 422800 | 423300 | 414900 | 400300 | 381900 | 366700 |
| 3 | 417000 | 410300 | 407800 | 422200 | 426900 | 413900 | 424300 | 423000 | 414700 | 398500 | 380700 | 366200 |
| 4 | 414700 | 409000 | 407300 | 421700 | 425600 | 416800 | 423000 | 422500 | 414100 | 398200 | 380700 | 366000 |
| 5 | 413100 | 410000 | 407500 | 420700 | 425100 | 415700 | 421500 | 421500 | 412800 | 398000 | 380400 | 365500 |
| 6 | 413100 | 409800 | 407800 | 419900 | 424100 | 414700 | 421700 | 420700 | 412300 | 397500 | 380000 | 364800 |
| 7 | 411500 | 408500 | 408000 | 419600 | 423000 | 415500 | 420400 | 420400 | 412600 | 396700 | 380000 | 364300 |
| 8 | 410800 | 406800 | 407800 | 419100 | 429500 | 415700 | 420400 | 419600 | 413100 | 396000 | 379500 | 365700 |
| 9 | 412600 | 410300 | 407800 | 418300 | 431900 | 415700 | 419100 | 418100 | 412300 | 395500 | 378700 | 365700 |
| 10 | 410300 | 409000 | 407000 | 418100 | 432200 | 415700 | 416500 | 416800 | 411300 | 394700 | 378000 | 365700 |
| 11 | 409000 | 408300 | 410500 | 418800 | 433700 | 415700 | 421500 | 416200 | 410500 | 394200 | 377800 | 365000 |
| 12 | 408800 | 408000 | 413600 | 417000 | 433700 | 416200 | 423500 | 419900 | 409800 | 393500 | 377100 | 364300 |
| 13 | 409000 | 407500 | 413900 | 417000 | 433200 | 416200 | 426900 | 420400 | 409000 | 392200 | 376600 | 364300 |
| 14 | 408300 | 407500 | 413900 | 416500 | 432200 | 416000 | 429300 | 421500 | 408000 | 391200 | 375600 | 364000 |
| 15 | 407500 | 407000 | 414100 | 416000 | 428800 | 414900 | 431400 | 424900 | 407300 | 390500 | 375100 | 363600 |
| 16 | 407800 | 406800 | 416200 | 417000 | 431600 | 414900 | 431400 | 425900 | 407000 | 390200 | 374400 | 362600 |
| 17 | 407800 | 406800 | 413900 | 417000 | 428200 | 415700 | 433700 | 427500 | 407000 | 389200 | 373900 | 362600 |
| 18 | 406300 | 406500 | 413100 | 416000 | 425900 | 415200 | 431900 | 430100 | 406500 | 388700 | 373900 | 362600 |
| 19 | 405300 | 406800 | 413400 | 416500 | 426200 | 415200 | 430600 | 430600 | 406300 | 388200 | 373200 | 362600 |
| 20 | 404800 | 406800 | 413900 | 418300 | 425100 | 415700 | 429000 | 429800 | 406500 | 387500 | 373000 | 362100 |
| 21 | 404500 | 411800 | 414700 | 421500 | 424300 | 415200 | 427500 | 429300 | 406300 | 387700 | 373000 | 361500 |
| 22 | 407500 | 410800 | 418800 | 430600 | 423500 | 413900 | 425400 | 427200 | 405500 | 387000 | 372700 | 361500 |
| 23 | 406000 | 410000 | 420900 | 435800 | 423000 | 416500 | 423800 | 425900 | 405000 | 386700 | 372000 | 361500 |
| 24 | 405800 | 410500 | 422000 | 439800 | 423000 | 417000 | 422500 | 423800 | 403500 | 386000 | 371500 | 361200 |
| 25 | 405300 | 410500 | 422200 | 442800 | 422000 | 416200 | 425900 | 423500 | 404300 | 384500 | 370800 | 362100 |
| 26 | 403800 | 409000 | 422800 | 443800 | 419400 | 416200 | 423800 | 422200 | 404000 | 383800 | 370100 | 361200 |
| 27 | 403800 | 411500 | 423000 | 440100 | 419100 | 417500 | 422500 | 420900 | 403300 | 385000 | 369600 | 360800 |
| 28 | 404800 | 409800 | 423300 | 438400 | 418800 | 420900 | 421500 | 419400 | 401300 | 386000 | 369100 | 360300 |
| 29 | 403300 | 409000 | 424300 | 435300 | 421700 | 422200 | 420700 | 417800 | 401800 | 385500 | 368100 | 362100 |
| 30 | 409300 | 408300 | 423800 | 434800 | --- | 422000 | 419900 | 417800 | 401300 | 385000 | 366700 | 362100 |
| 31 | 410500 | --- | 422800 | 432700 | --- | 422200 | --- | 415500 | --- | 384300 | 366200 | --- |
| MAX | 418300 | 411800 | 424300 | 443800 | 433700 | 422200 | 433700 | 430600 | 414900 | 401000 | 383100 | 366900 |
| MIN | 403300 | 406500 | 407000 | 416000 | 418800 | 413900 | 416500 | 415500 | 401300 | 383800 | 366200 | 360300 |
| (†) | 344.95 | 344.86 | 345.42 | 345.80 | 345.38 | 345.40 | 345.31 | 345.14 | 344.58 | 343.90 | 343.15 | 342.98 |
| (‡) | -8900 | -2200 | +14500 | +9900 | -11000 | +500 | -2300 | -4400 | -14200 | -17000 | -18100 | -4100 |

CAL YR 1979 MAX 476100 MIN 370800 ‡ +51500
WTR YR 1980 MAX 443800 MIN 360300 ‡ -57300

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

## 08031400 LAKE PALESTINE NEAR FRANKSTON, TX--Continued

## WATER-QUALITY RECORDS

**PERIOD OF RECORD.**--Chemical analyses: October 1976 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 09... | 1800 | 164 | 10.0 | 37 | 16 | 9.6 | 3.2 | 15 | 1.1 |
| JUN | | | | | | | | | |
| 18... | 1720 | 190 | 26.5 | 47 | 16 | 12 | 4.2 | 19 | 1.2 |

| DATE | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | |
| 09... | 3.6 | 26 | 0 | 23 | 21 | .2 | 8.8 | 97 |
| JUN | | | | | | | | |
| 18... | 3.9 | 38 | 0 | 28 | 24 | .1 | 4.1 | 114 |

## 08032000 NECHES RIVER NEAR NECHES, TX

LOCATION.--Lat 31°53'32", long 95°25'50", Anderson-Cherokee County line, Hydrologic Unit 12020001, on left bank downstream from bridge on U.S. Highway 79, 1.0 mi (1.6 km) downstream from Missouri Pacific Railway Co. bridge, 1.4 mi (2.3 km) downstream from Walnut Creek, 4.4 mi (7.1 km) northeast of Neches, and at mile 333.2 (536.1 km).

DRAINAGE AREA.--1,145 mi² (2,966 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1939 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 264.06 ft (80.486 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 27, 1945, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records good. Some regulation by Lake Palestine (station 08031400) 11 mi (18 km) upstream and by Lake Athens (station 08031290) 50 mi (80 km) upstream, capacity, 100,200 acre-ft (124 hm³). No large diversion above station.

AVERAGE DISCHARGE.--22 years (water years 1940-61) unregulated, 804 ft³/s (22.77 m³/s), 582,500 acre-ft/yr (718 hm³/yr); 19 years (water years 1962-80) regulated, 667 ft³/s (18.89 m³/s), 483,200 acre-ft/yr (596 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,500 ft³/s (1,290 m³/s), Apr. 2, 1945, gage height, 22.07 ft (6.727 m); no flow Oct. 3-5, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1908, stage 24.3 ft (7.41 m), was the highest since flood in May 1884, which was probably higher.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,890 ft³/s (110 m³/s) Jan. 28 at 1600 hours, gage height, 14.62 ft (4.456 m); minimum daily, 31 ft³/s (0.88 m³/s) Sept. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 694 | 380 | 295 | 1140 | 2720 | 721 | 822 | 777 | 465 | 116 | 88 | 33 |
| 2 | 598 | 395 | 240 | 1100 | 2420 | 841 | 824 | 731 | 398 | 116 | 67 | 33 |
| 3 | 557 | 373 | 229 | 1040 | 2030 | 865 | 831 | 794 | 360 | 113 | 45 | 35 |
| 4 | 462 | 300 | 224 | 1020 | 1660 | 646 | 850 | 886 | 341 | 107 | 40 | 34 |
| 5 | 430 | 242 | 219 | 1010 | 1430 | 540 | 885 | 919 | 319 | 106 | 39 | 33 |
| 6 | 334 | 225 | 223 | 969 | 1290 | 584 | 864 | 857 | 284 | 104 | 39 | 32 |
| 7 | 281 | 279 | 276 | 880 | 1200 | 522 | 797 | 783 | 252 | 103 | 38 | 31 |
| 8 | 251 | 221 | 234 | 842 | 1160 | 484 | 739 | 716 | 233 | 101 | 38 | 32 |
| 9 | 212 | 184 | 214 | 811 | 1450 | 496 | 738 | 676 | 266 | 91 | 37 | 40 |
| 10 | 257 | 246 | 209 | 754 | 2010 | 487 | 705 | 616 | 258 | 71 | 36 | 49 |
| 11 | 261 | 287 | 209 | 704 | 2420 | 475 | 621 | 506 | 222 | 74 | 36 | 38 |
| 12 | 178 | 226 | 289 | 709 | 2390 | 478 | 824 | 479 | 194 | 92 | 35 | 34 |
| 13 | 158 | 206 | 585 | 689 | 2230 | 530 | 1360 | 694 | 171 | 94 | 35 | 33 |
| 14 | 162 | 202 | 729 | 609 | 2130 | 604 | 2120 | 833 | 152 | 92 | 35 | 32 |
| 15 | 154 | 177 | 789 | 575 | 2050 | 538 | 2350 | 914 | 141 | 91 | 35 | 32 |
| 16 | 144 | 168 | 700 | 558 | 1930 | 479 | 2180 | 1170 | 136 | 91 | 36 | 32 |
| 17 | 145 | 166 | 613 | 573 | 1910 | 468 | 1910 | 1360 | 129 | 91 | 36 | 32 |
| 18 | 148 | 167 | 588 | 580 | 1870 | 571 | 1760 | 1560 | 126 | 89 | 36 | 32 |
| 19 | 147 | 173 | 466 | 555 | 1670 | 513 | 1700 | 1580 | 124 | 88 | 34 | 36 |
| 20 | 144 | 198 | 412 | 542 | 1460 | 450 | 1650 | 1550 | 131 | 88 | 34 | 37 |
| 21 | 143 | 334 | 407 | 607 | 1310 | 489 | 1560 | 1500 | 208 | 89 | 34 | 34 |
| 22 | 147 | 629 | 558 | 849 | 1230 | 488 | 1450 | 1430 | 223 | 91 | 33 | 34 |
| 23 | 224 | 612 | 949 | 1290 | 1150 | 422 | 1310 | 1360 | 232 | 90 | 33 | 33 |
| 24 | 193 | 456 | 1150 | 1900 | 1080 | 446 | 1200 | 1270 | 205 | 90 | 33 | 33 |
| 25 | 156 | 361 | 1260 | 2570 | 1030 | 523 | 1090 | 1160 | 164 | 89 | 32 | 34 |
| 26 | 147 | 325 | 1290 | 3020 | 994 | 505 | 1040 | 1040 | 144 | 88 | 32 | 34 |
| 27 | 150 | 303 | 1260 | 3500 | 927 | 483 | 1050 | 934 | 136 | 87 | 32 | 33 |
| 28 | 149 | 313 | 1210 | 3830 | 820 | 582 | 1030 | 846 | 130 | 106 | 34 | 32 |
| 29 | 145 | 397 | 1170 | 3780 | 738 | 669 | 968 | 715 | 125 | 143 | 32 | 32 |
| 30 | 148 | 384 | 1150 | 3410 | --- | 730 | 872 | 606 | 120 | 109 | 33 | 46 |
| 31 | 294 | --- | 1140 | 2990 | --- | 795 | --- | 524 | --- | 93 | 33 | --- |
| TOTAL | 7613 | 8929 | 19287 | 43406 | 46709 | 17424 | 36100 | 29786 | 6387 | 2993 | 1180 | 1035 |
| MEAN | 246 | 298 | 622 | 1400 | 1611 | 562 | 1203 | 961 | 213 | 96.5 | 38.1 | 34.5 |
| MAX | 694 | 629 | 1290 | 3830 | 2720 | 865 | 2350 | 1580 | 465 | 143 | 88 | 49 |
| MIN | 143 | 166 | 209 | 542 | 738 | 422 | 621 | 479 | 120 | 71 | 32 | 31 |
| AC-FT | 15100 | 17710 | 38260 | 86100 | 92650 | 34560 | 71600 | 59080 | 12670 | 5940 | 2340 | 2050 |

CAL YR 1979 TOTAL 329790 MEAN 904 MAX 7330 MIN 126 AC-FT 654100
WTR YR 1980 TOTAL 220849 MEAN 603 MAX 3830 MIN 31 AC-FT 438100

## 08032000 NECHES RIVER NEAR NECHES, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1969 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (1973-80): Maximum daily, 1,190 micromhos Aug. 29, 1976; minimum daily, 77 micromhos July 28, 1979

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 322 micromhos Oct. 31; minimum daily, 116 micromhos Apr. 14.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) |
|---|---|---|---|---|---|
| OCT | | | | | |
| 17... | 1000 | 145 | 193 | 21.0 | 30 |
| NOV | | | | | |
| 01... | 1045 | 368 | 155 | 16.0 | 24 |
| 28... | 1425 | 321 | 175 | 12.5 | 26 |
| DEC | | | | | |
| 12... | 1200 | 250 | 203 | 12.5 | 38 |
| JAN | | | | | |
| 09... | 1045 | 816 | 177 | 9.5 | 27 |
| 23... | 1445 | 1320 | 149 | 11.0 | 19 |
| FEB | | | | | |
| 13... | 1030 | 2260 | 152 | 6.0 | 19 |
| MAR | | | | | |
| 04... | 1430 | 624 | 183 | 10.5 | 29 |
| 27... | 0845 | 479 | 175 | 14.0 | 25 |
| APR | | | | | |
| 17... | 1300 | 1920 | 164 | 17.0 | 20 |
| MAY | | | | | |
| 07... | 1120 | 78 | 180 | 21.0 | 23 |
| 28... | 1500 | 814 | 188 | 21.0 | 25 |
| JUN | | | | | |
| 18... | 0945 | 125 | 205 | 27.5 | 30 |
| JUL | | | | | |
| 11... | 1520 | 78 | 225 | 28.0 | 32 |
| AUG | | | | | |
| 11... | 1050 | 45 | 225 | 28.5 | 34 |
| 21... | 1220 | 34 | 219 | 26.5 | 35 |
| SEP | | | | | |
| 10... | 0940 | 52 | 206 | 26.5 | 28 |

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 175 | 170 | 172 | 175 | 146 | 158 | --- | --- | --- | 167 | 161 | 163 |
| 2 | 177 | 172 | 174 | 165 | 146 | 157 | --- | --- | --- | 169 | 163 | 166 |
| 3 | 175 | 172 | 172 | 183 | 164 | 172 | --- | --- | --- | 168 | 166 | 168 |
| 4 | 178 | 170 | 175 | 181 | 170 | 175 | --- | --- | --- | 166 | 162 | 164 |
| 5 | 179 | 169 | 174 | 172 | 170 | 171 | --- | --- | --- | 165 | 162 | 163 |
| 6 | 186 | 175 | 180 | 174 | 172 | 172 | --- | --- | --- | 180 | 164 | 172 |
| 7 | 186 | 181 | 183 | 173 | 165 | 168 | --- | --- | --- | 189 | 168 | 182 |
| 8 | 189 | 181 | 185 | 179 | 169 | 172 | --- | --- | --- | 172 | 166 | 167 |
| 9 | 192 | 188 | 190 | 187 | 179 | 181 | --- | --- | --- | 178 | 172 | 174 |
| 10 | 189 | 167 | 179 | 187 | 180 | 184 | --- | --- | --- | 183 | 175 | 177 |
| 11 | 187 | 167 | 178 | 180 | 165 | 169 | --- | --- | --- | 183 | 176 | 180 |
| 12 | 200 | 187 | 195 | 172 | 170 | 170 | 300 | 192 | 229 | 175 | 164 | 167 |
| 13 | 197 | 191 | 195 | 174 | 172 | 172 | 233 | 160 | 184 | 260 | 166 | 187 |
| 14 | 191 | 183 | 188 | 174 | 168 | 171 | 161 | 153 | 156 | 181 | 177 | 179 |
| 15 | 191 | 182 | 187 | 173 | 170 | 172 | 158 | 151 | 154 | 178 | 173 | 175 |
| 16 | 194 | 191 | 192 | 176 | 172 | 174 | 177 | 158 | 170 | 199 | 179 | 184 |
| 17 | 192 | 188 | 190 | 179 | 173 | 175 | 176 | 163 | 169 | 189 | 173 | 178 |
| 18 | 189 | 185 | 187 | 179 | 173 | 175 | 175 | 163 | 170 | 176 | 172 | 173 |
| 19 | 188 | 184 | 186 | 179 | 175 | 178 | 182 | 174 | 177 | 178 | 173 | 175 |
| 20 | 190 | 185 | 187 | 189 | 178 | 184 | 179 | 173 | 176 | 194 | 175 | 177 |
| 21 | 187 | 184 | 185 | 313 | 181 | 218 | 178 | 173 | 175 | 236 | 175 | 199 |
| 22 | 187 | 179 | 184 | 195 | 158 | 166 | 280 | 170 | 213 | 233 | 160 | 191 |
| 23 | 179 | 166 | 168 | 179 | 158 | 168 | 167 | 137 | 144 | 159 | 141 | 145 |
| 24 | 219 | 166 | 196 | 183 | 179 | 180 | 153 | 144 | 149 | 151 | 146 | 149 |
| 25 | 203 | 185 | 189 | 183 | 179 | 180 | 158 | 140 | 149 | 153 | 149 | 151 |
| 26 | 187 | 181 | 184 | 179 | 177 | 177 | 160 | 153 | 156 | 157 | 153 | 155 |
| 27 | 183 | 179 | 180 | 180 | 177 | 179 | 165 | 156 | 160 | 157 | 156 | 156 |
| 28 | 183 | 179 | 180 | 178 | 165 | 171 | 165 | 162 | 164 | 156 | 156 | 156 |
| 29 | 183 | 179 | 180 | 166 | 162 | 164 | 163 | 160 | 162 | 156 | 153 | 153 |
| 30 | 193 | 177 | 181 | 165 | 165 | 165 | 163 | 162 | 163 | 153 | 153 | 153 |
| 31 | 322 | 175 | 213 | --- | --- | --- | 163 | 160 | 162 | 155 | 153 | 154 |
| MONTH | 322 | 166 | 184 | 313 | 146 | 174 | 300 | 137 | 169 | 260 | 141 | 169 |

## 08032000 NECHES RIVER NEAR NECHES, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 156 | 155 | 155 | 187 | 166 | 172 | 163 | 161 | 162 | 175 | 175 | 162 |
| 2 | 156 | 156 | 156 | 169 | 162 | 163 | 163 | 160 | 163 | 183 | 175 | 164 |
| 3 | 159 | 155 | 157 | 175 | 162 | 169 | 163 | 158 | 160 | 183 | 166 | 160 |
| 4 | 163 | 156 | 159 | 189 | 174 | 182 | 162 | 159 | 162 | 167 | 166 | 154 |
| 5 | 164 | 160 | 161 | 183 | 165 | 177 | 163 | 158 | 160 | 178 | 167 | 159 |
| 6 | 167 | 160 | 163 | 177 | 163 | 170 | 162 | 161 | 161 | 179 | 178 | 165 |
| 7 | 165 | 163 | 163 | 183 | 176 | 179 | 169 | 160 | 165 | 192 | 168 | 178 |
| 8 | 167 | 163 | 165 | 187 | 179 | 185 | 169 | 163 | 168 | 190 | 186 | 187 |
| 9 | 180 | 134 | 152 | 186 | 180 | 184 | 163 | 161 | 162 | 190 | 183 | 185 |
| 10 | 134 | 133 | 133 | 191 | 185 | 188 | 165 | 163 | 164 | 193 | 185 | 188 |
| 11 | 139 | 133 | 136 | 187 | 179 | 185 | 200 | 165 | 170 | 195 | 191 | 191 |
| 12 | 146 | 139 | 143 | 211 | 178 | 189 | 196 | 195 | 195 | 216 | 185 | 190 |
| 13 | 158 | 146 | 152 | 198 | 165 | 176 | 195 | 194 | 195 | 282 | 158 | 189 |
| 14 | 161 | 156 | 158 | 175 | 164 | 170 | 194 | 116 | 165 | 175 | 148 | 171 |
| 15 | 163 | 158 | 161 | 182 | 172 | 177 | 151 | 138 | 120 | 175 | 159 | 175 |
| 16 | 158 | 157 | 158 | 186 | 178 | 180 | 164 | 151 | 131 | 166 | 144 | 161 |
| 17 | 159 | 157 | 158 | 191 | 175 | 185 | 166 | 156 | 143 | 150 | 137 | 151 |
| 18 | 161 | 158 | 159 | 175 | 164 | 171 | 166 | 166 | 147 | 157 | 145 | 158 |
| 19 | 167 | 160 | 163 | 179 | 174 | 176 | 172 | 166 | 149 | 162 | 153 | 165 |
| 20 | 170 | 161 | 165 | 191 | 179 | 186 | 167 | 164 | 153 | 173 | 162 | 176 |
| 21 | 169 | 164 | 166 | 186 | 167 | 175 | 168 | 167 | 155 | 174 | 166 | 180 |
| 22 | 171 | 164 | 167 | 167 | 163 | 165 | 170 | 168 | 156 | 175 | 168 | 181 |
| 23 | 170 | 165 | 167 | 171 | 166 | 168 | 171 | 170 | 157 | 178 | 170 | 183 |
| 24 | 170 | 165 | 167 | 228 | 169 | 190 | 171 | 171 | 158 | 181 | 174 | 187 |
| 25 | 167 | 162 | 165 | 169 | 164 | 165 | 175 | 171 | 159 | 184 | 178 | 190 |
| 26 | 166 | 161 | 163 | 172 | 166 | 170 | 175 | 175 | 162 | 191 | 178 | 195 |
| 27 | 173 | 163 | 167 | 172 | 165 | 168 | 175 | 168 | 160 | 190 | 182 | 197 |
| 28 | 174 | 167 | 170 | 250 | 169 | 195 | 172 | 168 | 157 | 189 | 184 | 197 |
| 29 | 172 | 167 | 170 | 168 | 158 | 163 | 175 | 172 | 160 | 189 | 183 | 196 |
| 30 | --- | --- | --- | 164 | 163 | 163 | 175 | 175 | 162 | 189 | 183 | 196 |
| 31 | --- | --- | --- | 164 | 162 | 163 | --- | --- | --- | 186 | 181 | 194 |
| MONTH | 180 | 133 | 159 | 250 | 158 | 176 | 200 | 116 | 159 | 282 | 137 | 178 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 189 | 184 | 197 | --- | --- | --- | 222 | 205 | 215 | 221 | 219 | 220 |
| 2 | 191 | 185 | 198 | --- | --- | --- | 230 | 222 | 228 | 221 | 218 | 220 |
| 3 | 189 | 184 | 197 | --- | --- | --- | 231 | 228 | 230 | 218 | 213 | 216 |
| 4 | 189 | 183 | 197 | --- | --- | --- | 231 | 224 | 228 | 215 | 212 | 213 |
| 5 | 193 | 185 | 199 | --- | --- | --- | 224 | 224 | 224 | 214 | 212 | 213 |
| 6 | 197 | 190 | 203 | --- | --- | --- | 227 | 223 | 225 | 214 | 211 | 212 |
| 7 | 198 | 193 | 205 | --- | --- | --- | 224 | 220 | 222 | 215 | 212 | 214 |
| 8 | 197 | 190 | 204 | --- | --- | --- | 225 | 221 | 223 | 214 | 211 | 212 |
| 9 | 210 | 185 | 199 | --- | --- | --- | 226 | 223 | 224 | 217 | 207 | 212 |
| 10 | 211 | 189 | 209 | --- | --- | --- | 224 | 221 | 223 | 208 | 201 | 205 |
| 11 | 199 | 192 | 206 | --- | --- | 225 | 223 | 221 | 222 | 209 | 196 | 204 |
| 12 | 204 | 196 | 210 | 221 | 211 | 215 | 223 | 221 | 221 | 211 | 196 | 203 |
| 13 | 207 | 199 | 214 | 219 | 211 | 214 | 223 | 221 | 222 | 211 | 204 | 207 |
| 14 | 208 | 200 | 215 | 215 | 211 | 213 | 225 | 221 | 222 | 208 | 203 | 205 |
| 15 | 208 | 200 | 215 | 216 | 211 | 213 | 243 | 219 | 222 | 213 | 207 | 210 |
| 16 | --- | --- | 216 | 234 | 212 | 219 | 245 | 219 | 223 | 214 | 211 | 212 |
| 17 | --- | --- | --- | 215 | 209 | 212 | 221 | 219 | 220 | 215 | 212 | 213 |
| 18 | --- | --- | 215 | 211 | 207 | 209 | 222 | 218 | 220 | 217 | 208 | 213 |
| 19 | --- | --- | 213 | 211 | 206 | 208 | 226 | 221 | 223 | 245 | 207 | 214 |
| 20 | --- | --- | 211 | 209 | 202 | 206 | 224 | 221 | 222 | 208 | 206 | 207 |
| 21 | --- | --- | --- | 207 | 199 | 203 | 221 | 218 | 220 | 212 | 207 | 210 |
| 22 | --- | --- | --- | 204 | 199 | 202 | 221 | 218 | 220 | 208 | 202 | 204 |
| 23 | --- | --- | --- | 206 | 199 | 202 | 222 | 219 | 220 | 213 | 205 | 209 |
| 24 | --- | --- | --- | 214 | 203 | 208 | 222 | 220 | 221 | 216 | 210 | 213 |
| 25 | --- | --- | --- | 209 | 206 | 207 | 222 | 220 | 221 | 216 | 213 | 215 |
| 26 | --- | --- | --- | 232 | 192 | 208 | 222 | 221 | 221 | 213 | 213 | 213 |
| 27 | --- | --- | --- | 207 | 183 | 193 | 222 | 218 | 221 | 213 | 210 | 212 |
| 28 | --- | --- | --- | 212 | 191 | 199 | 236 | 215 | 219 | 213 | 210 | 211 |
| 29 | --- | --- | --- | 213 | 193 | 202 | 229 | 215 | 221 | 211 | 203 | 208 |
| 30 | --- | --- | --- | 204 | 198 | 201 | 222 | 217 | 219 | 230 | 195 | 206 |
| 31 | --- | --- | --- | 205 | 201 | 203 | 221 | 219 | 220 | --- | --- | --- |
| MONTH | 211 | 183 | 206 | 234 | 183 | 208 | 245 | 205 | 222 | 245 | 195 | 211 |

## 08033000 NECHES RIVER NEAR DIBOLL, TX

LOCATION.--Lat 31°07'58", long 94°48'35", Angelina-Polk County line, Hydrologic Unit 12020002, near center of main span on downstream side of downstream bridge on U.S. Highway 59, 700 ft (210 m) downstream from Texas and New Orleans Railroad Co. bridge, 2.9 mi (4.7 km) downstream from Alabama Creek, 3.8 mi (6.1 km) south of Diboll, and at mile 203.5 (327.4 km).

DRAINAGE AREA.--2,724 mi$^2$ (7,055 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to September 1925, March 1939 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1242: 1950. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 134.46 ft (40.983 m) National Geodetic Vertical Datum of 1929. Prior to July 10, 1925, nonrecording gage at site 630 ft (192 m) upstream; July 10 to Aug. 31, 1925, and Mar. 30, 1939, to Sept. 24, 1943, nonrecording gage at site 500 ft (150 m) upstream; Sept. 25, 1943, to Aug. 16, 1973, nonrecording gage at site 70 ft (21 m) upstream; all at present datum.

REMARKS.--Water-discharge records good. At times low flow may be affected by regulation by Lake Athens (station 08031290), Lake Palestine (station 08031400), and Lake Jacksonville, combined capacity 130,700 acre-ft/yr (161 hm$^3$). During the current year, Upper Neches River Municipal Water Authority diverted 3,080 acre-ft (3.80 hm$^3$) from stream at Rocky Point Crossing 120 mi (193 km) upstream for municipal and industrial uses in the Palestine area.

AVERAGE DISCHARGE.--24 years (water years 1923-25, 1939-61) unregulated, 1,807 ft$^3$/s (51.17 m$^3$/s), 1,309,000 acre-ft/yr (1.61 km$^3$/yr); 19 years (water years 1962-80) regulated, 1,397 ft$^3$/s (39.56 m$^3$/s), 1,012,000 acre-ft/yr (1.25 km$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,900 ft$^3$/s (1,410 m$^3$/s) May 4, 1944, gage height, 18.70 ft (5.700 m); no flow Aug. 15-22, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1874, 21 ft (6.4 m) in May 1884, discharge, about 110,000 ft$^3$/s (3,120 m$^3$/s), from rating curve extended above 40,000 ft$^3$/s (1,130 m$^3$/s); flood in 1900 reached a stage of 19.9 ft (6.07 m), discharge, about 80,000 ft$^3$/s (2,270 m$^3$/s); from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,600 ft$^3$/s (357 m$^3$/s) May 17 at 1200 hours, gage height, 15.12 ft (4.609 m); minimum daily, 30 ft$^3$/s (0.85 m$^3$/s) Sept. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2510 | 1330 | 1720 | 2560 | 3670 | 2750 | 3970 | 2950 | 2270 | 306 | 136 | 30 |
| 2 | 2290 | 1270 | 1430 | 2610 | 3570 | 2710 | 3360 | 2820 | 2040 | 275 | 155 | 31 |
| 3 | 2130 | 1240 | 1160 | 2620 | 3450 | 2860 | 3240 | 2710 | 1810 | 250 | 170 | 31 |
| 4 | 2010 | 1120 | 974 | 2570 | 3340 | 3170 | 2960 | 2590 | 1600 | 230 | 167 | 35 |
| 5 | 1890 | 1010 | 860 | 2500 | 3260 | 3230 | 2400 | 2360 | 1380 | 216 | 153 | 44 |
| 6 | 1750 | 893 | 803 | 2440 | 3240 | 3150 | 2010 | 2130 | 1180 | 205 | 137 | 61 |
| 7 | 1580 | 787 | 763 | 2320 | 3270 | 3020 | 1770 | 1880 | 1020 | 194 | 121 | 59 |
| 8 | 1380 | 718 | 724 | 2160 | 3390 | 2740 | 1630 | 1700 | 876 | 185 | 107 | 58 |
| 9 | 1180 | 671 | 688 | 2040 | 4360 | 2390 | 1520 | 1540 | 762 | 179 | 93 | 56 |
| 10 | 994 | 628 | 655 | 1940 | 6220 | 2100 | 1450 | 1400 | 680 | 170 | 80 | 54 |
| 11 | 851 | 587 | 633 | 1860 | 6450 | 1820 | 1400 | 1320 | 615 | 164 | 66 | 53 |
| 12 | 733 | 555 | 1270 | 1760 | 6100 | 1630 | 1390 | 1280 | 566 | 156 | 55 | 54 |
| 13 | 638 | 534 | 4450 | 1680 | 5540 | 1460 | 1580 | 1300 | 524 | 152 | 49 | 56 |
| 14 | 566 | 516 | 6190 | 1620 | 4970 | 1340 | 2260 | 1640 | 493 | 147 | 46 | 58 |
| 15 | 517 | 495 | 4870 | 1550 | 4640 | 1250 | 3000 | 3110 | 470 | 140 | 43 | 59 |
| 16 | 491 | 483 | 3630 | 1480 | 4350 | 1210 | 3380 | 8840 | 448 | 130 | 43 | 63 |
| 17 | 471 | 482 | 2780 | 1490 | 4180 | 1180 | 3390 | 12300 | 423 | 121 | 43 | 71 |
| 18 | 447 | 476 | 2210 | 1570 | 4040 | 1160 | 3290 | 11400 | 392 | 114 | 44 | 74 |
| 19 | 425 | 460 | 1860 | 1530 | 3940 | 1140 | 3310 | 9290 | 361 | 115 | 44 | 76 |
| 20 | 407 | 448 | 1640 | 1490 | 3820 | 1280 | 3410 | 8250 | 342 | 116 | 44 | 74 |
| 21 | 391 | 442 | 1510 | 1810 | 3710 | 1790 | 3550 | 7310 | 328 | 120 | 44 | 71 |
| 22 | 395 | 887 | 1440 | 3680 | 3600 | 1950 | 3640 | 6650 | 308 | 125 | 44 | 70 |
| 23 | 404 | 1600 | 1440 | 7590 | 3500 | 1810 | 3680 | 5690 | 317 | 120 | 44 | 55 |
| 24 | 393 | 2940 | 2040 | 10500 | 3390 | 1650 | 3660 | 4850 | 341 | 118 | 42 | 50 |
| 25 | 387 | 3970 | 2190 | 9830 | 3260 | 1620 | 3680 | 4320 | 356 | 115 | 40 | 51 |
| 26 | 390 | 4140 | 2290 | 7930 | 3130 | 1550 | 3560 | 3930 | 363 | 116 | 38 | 57 |
| 27 | 398 | 3680 | 2260 | 6380 | 3030 | 1770 | 3420 | 3590 | 372 | 115 | 35 | 59 |
| 28 | 398 | 3130 | 2330 | 5320 | 2920 | 4730 | 3390 | 3310 | 374 | 127 | 32 | 60 |
| 29 | 398 | 2600 | 2430 | 4620 | 2790 | 5630 | 3330 | 3040 | 362 | 139 | 32 | 60 |
| 30 | 432 | 2100 | 2490 | 4090 | --- | 5450 | 3120 | 2770 | 338 | 140 | 35 | 57 |
| 31 | 1370 | --- | 2510 | 3820 | --- | 4970 | --- | 2500 | --- | 137 | 33 | --- |
| TOTAL | 28616 | 40192 | 62240 | 105360 | 115130 | 74510 | 85750 | 128770 | 21711 | 4937 | 2215 | 1687 |
| MEAN | 923 | 1340 | 2008 | 3399 | 3970 | 2404 | 2858 | 4154 | 724 | 159 | 71.5 | 56.2 |
| MAX | 2510 | 4140 | 6190 | 10500 | 6450 | 5630 | 3970 | 12300 | 2270 | 306 | 170 | 76 |
| MIN | 387 | 442 | 633 | 1480 | 2790 | 1140 | 1390 | 1280 | 308 | 114 | 32 | 30 |
| AC-FT | 56760 | 79720 | 123500 | 209000 | 228400 | 147800 | 170100 | 255400 | 43060 | 9790 | 4390 | 3350 |

CAL YR 1979 TOTAL 999134 MEAN 2737 MAX 15500 MIN 260 AC-FT 1982000
WTR YR 1980 TOTAL 671118 MEAN 1834 MAX 12300 MIN 30 AC-FT 1331000

## 08033000 NECHES RIVER NEAR DIBOLL, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1969 to current year.
WATER TEMPERATURES: October 1969 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (1969-1979): Maximum daily, 614 micromhos May 2, 1971; minimum daily, 85 micromhos Jan. 27, 1974.
WATER TEMPERATURES (1969-1979): Maximum daily, 38.0°C Aug. 31, Sept. 6, 1970, Aug. 17, 18, 22, 1977; minimum daily, 3.0°C Jan. 21, 1970, Feb. 5, 6, 1979.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | |
| 09... | 1245 | 1180 | 177 | 7.8 | 22.5 | 7.4 | 83 | 1.1 | 36 | 16 |
| NOV | | | | | | | | | | |
| 06... | 1515 | 810 | 214 | -- | 15.0 | -- | -- | -- | 45 | 21 |
| 20... | 1215 | 447 | 200 | 7.2 | 14.5 | 10.3 | 100 | .5 | 43 | 14 |
| JAN | | | | | | | | | | |
| 15... | 1627 | 1540 | 296 | -- | 13.0 | -- | -- | -- | 43 | 0 |
| 17... | 1745 | 1520 | 280 | 6.8 | 15.0 | 10.2 | 100 | 1.7 | 61 | 43 |
| FEB | | | | | | | | | | |
| 28... | 1400 | 2930 | 182 | 7.1 | 14.5 | 9.8 | 95 | 2.0 | 38 | 14 |
| APR | | | | | | | | | | |
| 23... | 1110 | 3700 | 145 | 6.8 | 19.0 | 7.9 | 84 | 1.1 | 30 | 13 |
| JUN | | | | | | | | | | |
| 18... | 0755 | 396 | 210 | 7.4 | 27.0 | 6.2 | 77 | 3.4 | 44 | 20 |
| AUG | | | | | | | | | | |
| 01... | 1550 | 139 | 270 | 6.4 | 30.0 | 7.2 | 95 | .6 | 44 | 12 |

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | |
| 09... | 8.5 | 3.7 | 16 | 1.2 | 3.5 | 25 | 0 | 15 | 18 | .1 |
| NOV | | | | | | | | | | |
| 06... | 11 | 4.3 | 22 | 1.4 | 3.5 | 30 | 0 | 27 | 29 | .1 |
| 20... | 9.6 | 4.6 | 23 | 1.5 | 3.7 | 35 | 0 | 23 | 30 | .1 |
| JAN | | | | | | | | | | |
| 15... | 9.9 | 4.4 | 45 | 3.0 | 3.1 | 66 | 0 | 52 | 30 | .1 |
| 17... | 15 | 5.8 | 30 | 1.7 | 3.4 | 22 | 0 | 58 | 35 | .1 |
| FEB | | | | | | | | | | |
| 28... | 8.9 | 3.9 | 20 | 1.4 | 3.2 | 30 | 0 | 29 | 24 | .1 |
| APR | | | | | | | | | | |
| 23... | 6.7 | 3.1 | 14 | 1.1 | 3.0 | 20 | 0 | 20 | 19 | .1 |
| JUN | | | | | | | | | | |
| 18... | 9.9 | 4.7 | 20 | 1.3 | 3.2 | 29 | 0 | 29 | 30 | .2 |
| AUG | | | | | | | | | | |
| 01... | 9.7 | 4.9 | 36 | 2.4 | 4.1 | 39 | 0 | 37 | 38 | .2 |

| DATE | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) |
|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | |
| 09... | 14 | 91 | .09 | .02 | .11 | .03 | .73 | .76 | .060 |
| NOV | | | | | | | | | |
| 06... | 19 | 131 | -- | -- | -- | -- | -- | -- | -- |
| 20... | 17 | 128 | .13 | .02 | .15 | .03 | .44 | .47 | .050 |
| JAN | | | | | | | | | |
| 15... | 15 | 192 | -- | -- | -- | -- | -- | -- | -- |
| 17... | 15 | 173 | .05 | .01 | .06 | .02 | .45 | .47 | .060 |
| FEB | | | | | | | | | |
| 28... | 5.7 | 110 | .01 | .01 | .02 | .00 | .43 | .43 | .010 |
| APR | | | | | | | | | |
| 23... | 9.2 | 85 | .05 | .00 | .05 | .04 | .95 | .99 | .090 |
| JUN | | | | | | | | | |
| 18... | 16 | 127 | .04 | .01 | .05 | .06 | .94 | 1.0 | .080 |
| AUG | | | | | | | | | |
| 01... | 9.8 | 159 | .15 | .00 | .15 | .05 | 1.3 | 1.3 | .100 |

08033000 NECHES RIVER NEAR DIBOLL, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCTANCE (MICROMHOS) | DISSOLVED SOLIDS (MG/L) | DISSOLVED SOLIDS (TONS) | DISSOLVED CHLORIDE (MG/L) | DISSOLVED CHLORIDE (TONS) | DISSOLVED SULFATE (MG/L) | DISSOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 28616 | 182 | 102 | 7860 | 24 | 1880 | 21 | 1630 | 39 |
| NOV. | 1979 | 40192 | 221 | 123 | 13300 | 29 | 3160 | 25 | 2730 | 44 |
| DEC. | 1979 | 62240 | 237 | 132 | 22200 | 31 | 5240 | 27 | 4510 | 46 |
| JAN. | 1980 | 105360 | 182 | 102 | 28900 | 24 | 6860 | 21 | 5930 | 37 |
| FEB. | 1980 | 115130 | 187 | 104 | 32400 | 25 | 7730 | 22 | 6700 | 39 |
| MAR. | 1980 | 74510 | * | * | * | * | * | * | * | * |
| APR. | 1980 | 85750 | * | * | * | * | * | * | * | * |
| MAY | 1980 | 128770 | * | * | * | * | * | * | * | * |
| JUNE | 1980 | 21711 | * | * | * | * | * | * | * | * |
| AUG. | 1980 | 2215 | 261 | 145 | 870 | 34 | 204 | 29 | 176 | 49 |
| SEPT | 1980 | 1687 | 268 | 150 | 681 | 35 | 159 | 30 | 137 | 48 |
| TOTAL | | 671118 | ** | ** | ** | ** | ** | ** | ** | ** |
| WTD. AVG. | | 1834 | ** | ** | ** | ** | ** | ** | ** | ** |

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 207 | 245 | 216 | 237 | 167 | | | | | | 289 | 232 |
| 2 | 177 | 242 | 219 | 235 | 174 | | | | | | 280 | 238 |
| 3 | 182 | 238 | 222 | 240 | 181 | | | | | | 273 | 246 |
| 4 | 181 | 237 | 221 | 235 | 189 | | | | | | 261 | 255 |
| 5 | 182 | 235 | 225 | 231 | 196 | | | | | | 254 | 226 |
| 6 | 181 | 232 | 229 | 295 | 200 | | | | | | 242 | 215 |
| 7 | 182 | 231 | 235 | 280 | 199 | | | | | | 237 | 220 |
| 8 | 181 | 229 | 238 | 260 | 183 | | | | | | 247 | 248 |
| 9 | 181 | 227 | 241 | 235 | 180 | | | | | | 232 | 265 |
| 10 | 182 | 225 | 242 | 238 | 165 | | | | | | 245 | 279 |
| 11 | 183 | 223 | 244 | 245 | 162 | | | | | | 256 | 319 |
| 12 | 180 | 221 | 248 | 270 | 168 | | | | | | 261 | 305 |
| 13 | 178 | 220 | 244 | 286 | 176 | | | | | | 262 | 270 |
| 20 | 182 | 224 | 241 | 310 | 200 | | | | | | 283 | 237 |
| 21 | 180 | 232 | 242 | 304 | 198 | | | | | | 281 | 239 |
| 22 | 179 | 226 | 244 | 123 | 197 | | | | | | 272 | 240 |
| 23 | 178 | 221 | 242 | 120 | 199 | | | | | | 271 | 242 |
| 24 | 179 | 218 | 241 | 117 | 196 | | | | | | 269 | 245 |
| 25 | 181 | 212 | 238 | 115 | 197 | | | | | | 257 | 242 |
| 26 | 179 | 210 | 235 | 122 | 195 | | | | | | 255 | 258 |
| 27 | 175 | 213 | 241 | 130 | 193 | | | | | | 253 | 274 |
| 28 | 171 | 216 | 242 | 135 | 194 | | | | | | 250 | 300 |
| 29 | 179 | 217 | 241 | 144 | 196 | | | | | | 247 | 320 |
| 30 | 168 | 218 | 241 | 154 | --- | | | | | | 240 | 348 |
| 31 | 182 | --- | 235 | 160 | --- | | | | | | 233 | --- |
| MEAN | 180 | 224 | 236 | 226 | 189 | | | | | | 261 | 268 |

08033000 NECHES RIVER NEAR DIBOLL, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 23.0 | 15.0 | 9.0 | 17.0 | 7.0 | | | | | | 31.0 | 29.0 |
| 2 | 23.0 | 19.0 | 9.0 | 12.0 | 5.0 | | | | | | 32.0 | 29.0 |
| 3 | 23.0 | 15.0 | 8.0 | 17.0 | --- | | | | | | 32.0 | 31.0 |
| 4 | 23.0 | 12.0 | --- | 17.0 | --- | | | | | | 31.0 | 31.0 |
| 5 | 23.0 | 12.0 | 8.0 | 17.0 | 17.0 | | | | | | 30.0 | 29.0 |
| 6 | 23.0 | 12.0 | 8.0 | 17.0 | 17.0 | | | | | | 31.0 | 28.0 |
| 7 | 24.0 | 15.0 | 8.0 | 16.0 | 16.0 | | | | | | 30.0 | 28.0 |
| 8 | 24.0 | 15.0 | 8.0 | 16.0 | 16.0 | | | | | | 32.0 | 28.0 |
| 9 | 24.0 | 13.0 | 8.0 | 17.0 | 17.0 | | | | | | 29.0 | 29.0 |
| 10 | 24.0 | 13.0 | 8.0 | 17.0 | 17.0 | | | | | | 30.0 | 31.0 |
| 11 | 23.0 | 13.0 | 8.0 | 17.0 | 17.0 | | | | | | 31.0 | 30.0 |
| 12 | 23.0 | 13.0 | 7.0 | 17.0 | 17.0 | | | | | | 30.0 | 31.0 |
| 13 | 23.0 | 13.0 | 7.0 | 12.0 | 12.0 | | | | | | 31.0 | 30.0 |
| 14 | 22.0 | 12.0 | 7.0 | 12.0 | 12.0 | | | | | | 29.0 | 30.0 |
| 15 | 22.0 | 12.0 | 7.0 | 13.0 | 13.0 | | | | | | 30.0 | 31.0 |
| 16 | 22.0 | 12.0 | --- | 13.0 | 13.0 | | | | | | 31.0 | 31.0 |
| 17 | 22.0 | 12.0 | --- | 15.0 | 15.0 | | | | | | 31.0 | 29.0 |
| 18 | 21.0 | 13.0 | --- | 15.0 | 15.0 | | | | | | 30.0 | 29.0 |
| 19 | 27.0 | 14.0 | 6.0 | 15.0 | 15.0 | | | | | | 31.0 | 28.0 |
| 20 | 21.0 | --- | 6.0 | 15.0 | 15.0 | | | | | | 30.0 | 28.0 |
| 21 | 21.0 | --- | 6.0 | 14.0 | 14.0 | | | | | | 31.0 | 28.0 |
| 22 | 21.0 | 14.0 | 6.0 | 13.0 | 13.0 | | | | | | 30.0 | 29.0 |
| 23 | 20.0 | 14.0 | 7.0 | 12.0 | 12.0 | | | | | | 29.0 | 28.0 |
| 24 | 20.0 | 12.0 | 7.0 | 12.0 | 12.0 | | | | | | 29.0 | 29.0 |
| 25 | 19.0 | 11.0 | 7.0 | 12.0 | 12.0 | | | | | | 30.0 | 28.0 |
| 26 | 19.0 | 10.0 | 8.0 | 12.0 | 12.0 | | | | | | 31.0 | 28.0 |
| 27 | 19.0 | 10.0 | 8.0 | 10.0 | 10.0 | | | | | | 29.0 | 28.0 |
| 28 | 20.0 | 9.0 | 8.0 | 10.0 | 10.0 | | | | | | 29.0 | 29.0 |
| 29 | 20.0 | 9.0 | 8.0 | 9.0 | 9.0 | | | | | | 30.0 | 28.0 |
| 30 | 20.0 | 9.0 | 8.0 | 9.0 | --- | | | | | | 31.0 | 26.0 |
| 31 | 19.0 | --- | 5.0 | 9.0 | --- | | | | | | 31.0 | --- |
| MEAN | 22.0 | 12.5 | 7.5 | 14.0 | 13.5 | | | | | | 30.5 | 29.0 |

## 08033300 PINEY CREEK NEAR GROVETON, TX

LOCATION.--Lat 31°08'25", long 95°05'11", Trinity County, Hydrologic Unit 12020002, on left bank at downstream side of bridge on State Highway 94, 6.3 mi (10.1 km) northeast of Groveton, and 7.3 mi (11.7 km) upstream from Caney Creek.

DRAINAGE AREA.--79.0 mi² (204.6 km²).

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 251.40 ft (76.627 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years, 39.3 ft³/s (1.113 m³/s), 6.76 in/yr (172 mm/yr), 28,470 acre-ft/yr (35.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,480 ft³/s (184 m³/s) Apr. 20, 1979, gage height, 15.70 ft (4.785 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1921, 17 ft (5.2 m) in May 1942, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 550 ft³/s (15.6 m³/s) and maximum (*):

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dec. 12 | 2400 | 1,150 | 32.6 | 12.75 | 3.886 | Mar. 28 | 1300 | 1,450 | 41.1 | 13.01 | 3.965 |
| Jan. 23 | 0100 | 3,090 | 87.5 | 13.99 | 4.264 | May 16 | 0900 | *6,220 | 176 | 15.59 | 4.752 |
| Feb. 10 | 1500 | 805 | 22.8 | 12.16 | 3.706 | | | | | | |

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.2 | 67 | 7.4 | 45 | 81 | 62 | 84 | 6.8 | 4.5 | .05 | .00 | .00 |
| 2 | 2.4 | 18 | 6.4 | 30 | 54 | 86 | 63 | 5.5 | 3.7 | .05 | .00 | .00 |
| 3 | 1.9 | 5.8 | 5.6 | 29 | 43 | 44 | 159 | 4.4 | 3.0 | .04 | .00 | .00 |
| 4 | 1.4 | 2.4 | 5.0 | 71 | 37 | 26 | 109 | 7.3 | 2.5 | .04 | .00 | .00 |
| 5 | 1.1 | 1.2 | 4.7 | 48 | 31 | 20 | 51 | 5.0 | 2.1 | .04 | .00 | .00 |
| 6 | .91 | .69 | 4.5 | 31 | 27 | 16 | 31 | 3.2 | 1.8 | .04 | .00 | .00 |
| 7 | .81 | .51 | 4.1 | 23 | 23 | 12 | 23 | 2.4 | 1.7 | .04 | .00 | .00 |
| 8 | .72 | .41 | 3.6 | 19 | 29 | 11 | 19 | 2.4 | 1.5 | .04 | .00 | .00 |
| 9 | .68 | .43 | 3.2 | 15 | 421 | 9.3 | 15 | 2.2 | 1.3 | .04 | .00 | .00 |
| 10 | .64 | .42 | 2.9 | 13 | 756 | 7.8 | 12 | 2.0 | 1.3 | .04 | .00 | .00 |
| 11 | .56 | .35 | 3.3 | 12 | 620 | 6.7 | 10 | 1.8 | 1.1 | .04 | .00 | .00 |
| 12 | .53 | .32 | 449 | 11 | 310 | 6.2 | 9.5 | 1.8 | 1.0 | .04 | .00 | .00 |
| 13 | .53 | .50 | 1040 | 9.1 | 80 | 5.3 | 62 | 6.7 | .97 | .04 | .00 | .00 |
| 14 | .46 | .33 | 563 | 7.9 | 54 | 4.1 | 156 | 229 | .80 | .03 | .00 | .00 |
| 15 | .43 | .27 | 131 | 7.3 | 42 | 3.3 | 94 | 1510 | .67 | .03 | .00 | .00 |
| 16 | .40 | .24 | 61 | 23 | 36 | 3.7 | 46 | 4790 | .60 | .03 | .00 | .00 |
| 17 | .40 | .23 | 38 | 102 | 31 | 5.2 | 25 | 1660 | .51 | .02 | .00 | .00 |
| 18 | .34 | .23 | 26 | 68 | 26 | 12 | 16 | 915 | .47 | .02 | .00 | .00 |
| 19 | .34 | .21 | 21 | 37 | 23 | 6.0 | 11 | 664 | .45 | .02 | .00 | .00 |
| 20 | .32 | .24 | 18 | 65 | 21 | 48 | 8.2 | 151 | .41 | .02 | .00 | .00 |
| 21 | .32 | 73 | 15 | 373 | 19 | 101 | 6.4 | 51 | 1.2 | .02 | .00 | .00 |
| 22 | .72 | 480 | 16 | 1130 | 16 | 59 | 5.2 | 34 | 1.1 | .02 | .00 | .00 |
| 23 | 9.5 | 486 | 22 | 2200 | 14 | 30 | 4.3 | 26 | .51 | .01 | .00 | .00 |
| 24 | 1.5 | 241 | 292 | 987 | 12 | 169 | 3.7 | 20 | .34 | .01 | .00 | .00 |
| 25 | .55 | 63 | 366 | 566 | 9.7 | 73 | 7.8 | 17 | .18 | .01 | .00 | .00 |
| 26 | .38 | 33 | 193 | 120 | 7.8 | 50 | 155 | 14 | .11 | .01 | .00 | .00 |
| 27 | .29 | 21 | 62 | 61 | 6.8 | 225 | 75 | 12 | .06 | .01 | .00 | .00 |
| 28 | .25 | 16 | 39 | 45 | 6.3 | 1170 | 32 | 9.9 | .06 | .00 | .00 | .00 |
| 29 | .22 | 12 | 42 | 35 | 6.2 | 874 | 16 | 8.2 | .06 | .00 | .00 | .00 |
| 30 | 7.8 | 9.0 | 87 | 39 | --- | 633 | 9.5 | 6.9 | .05 | .00 | .00 | .00 |
| 31 | 174 | --- | 70 | 104 | --- | 359 | --- | 5.6 | --- | .00 | .00 | --- |
| TOTAL | 213.60 | 1533.78 | 3601.7 | 6326.3 | 2842.8 | 4137.6 | 1318.6 | 10175.1 | 34.05 | .80 | .00 | .00 |
| MEAN | 6.89 | 51.1 | 116 | 204 | 98.0 | 133 | 44.0 | 328 | 1.14 | .026 | .000 | .000 |
| MAX | 174 | 486 | 1040 | 2200 | 756 | 1170 | 159 | 4790 | 4.5 | .05 | .00 | .00 |
| MIN | .22 | .21 | 2.9 | 7.3 | 6.2 | 3.3 | 3.7 | 1.8 | .05 | .00 | .00 | .00 |
| CFSM | .09 | .65 | 1.47 | 2.58 | 1.24 | 1.68 | .56 | 4.15 | .01 | .000 | .000 | .000 |
| IN. | .10 | .72 | 1.70 | 2.98 | 1.34 | 1.95 | .62 | 4.79 | .02 | .00 | .00 | .00 |
| AC-FT | 424 | 3040 | 7140 | 12550 | 5640 | 8210 | 2620 | 20180 | 68 | 1.6 | .00 | .00 |

CAL YR 1979 TOTAL 56988.48 MEAN 156 MAX 3740 MIN .07 CFSM 1.98 IN 26.83 AC-FT 113000
WTR YR 1980 TOTAL 30184.33 MEAN 82.5 MAX 4790 MIN .00 CFSM 1.04 IN 14.21 AC-FT 59870

## 08033500 NECHES RIVER NEAR ROCKLAND, TX

**LOCATION.**--Lat 31°01'29", long 94°23'55", Tyler County, Hydrologic Unit 12020003, on downstream side of bridge at U.S. Highway 69, 2,200 ft (671 m) upstream from abandoned ferry crossing, 0.8 mi (1.3 km) upstream from Texas and New Orleans Railway Co. bridge, 1.2 mi (1.9 km) north of Rockland, 3.2 mi (5.1 km) downstream from Billiams Creek, and 32.4 mi (52.1 km) upstream from Angelina River.

**DRAINAGE AREA.**--3,636 $mi^2$ (9,417 $km^2$).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--July 1903 to current year.

**REVISED RECORDS.**--WSP 878: 1926-27. WSP 1342: 1922(M), 1935. WSP 1732: Drainage area.

**GAGE.**--Water-stage recorder. Datum of gage is 88.41 ft (26.947 m) National Geodetic Vertical Datum of 1929. Prior to May 23, 1973, nonrecording gage located 2,200 ft (671 m) downstream at datum 3.00 ft (0.914 m) higher. May 23, 1973, to Sept. 30, 1975, recording gage at present site at datum 3.00 ft (0.914 m) higher.

**REMARKS.**--Water-discharge records good. No large diversions above station. At times flow may be affected by regulation from upstream reservoirs.

**AVERAGE DISCHARGE.**--58 years (water years 1904-61) unregulated, 2,362 $ft^3/s$ (66.89 $m^3/s$), 1,711,000 acre-ft/yr (2.11 $km^3/yr$); 19 years (water years 1962-80) regulated, 2,007 $ft^3/s$ (56.84 $m^3/s$), 1,454,000 acre-ft/yr (1.79 $km^3/yr$).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 49,800 $ft^3/s$ (1,410 $m^3/s$) May 6, 1944, gage height, 35.04 ft (10.680 m), present site; minimum observed during period of daily records, 1.6 $ft^3/s$ (0.045 $m^3/s$) Sept. 28-30, Oct. 1, 2, 1956.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Historical flood information begins with flood in May 1884 which reached a stage of 38.0 ft (11.58 m), present site, from information by local resident, discharge, about 62,000 $ft^3/s$ (1,760 $m^3/s$).

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 19,400 $ft^3/s$ (549 $m^3/s$) May 20 at 1800 hours, gage height, 25.80 ft (7.864 m); minimum daily, 40 $ft^3/s$ (1.13 $m^3/s$) Sept. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3190 | 2180 | 3380 | 3010 | 7630 | 3430 | 11600 | 3480 | 3340 | 345 | 140 | 43 |
| 2 | 2930 | 2220 | 2990 | 2950 | 6500 | 3320 | 11000 | 3410 | 3040 | 318 | 134 | 44 |
| 3 | 2720 | 1980 | 2420 | 2930 | 5500 | 3230 | 9950 | 3240 | 2760 | 291 | 131 | 43 |
| 4 | 2560 | 1920 | 1870 | 3000 | 4650 | 3200 | 8560 | 3060 | 2490 | 267 | 140 | 41 |
| 5 | 2370 | 1840 | 1450 | 2980 | 4160 | 3170 | 7200 | 2900 | 2190 | 248 | 151 | 40 |
| 6 | 2240 | 1610 | 1200 | 2920 | 3900 | 3180 | 5870 | 2750 | 1900 | 231 | 152 | 45 |
| 7 | 2110 | 1310 | 1050 | 2840 | 3710 | 3210 | 4550 | 2600 | 1600 | 219 | 144 | 58 |
| 8 | 1980 | 1080 | 968 | 2740 | 3810 | 3230 | 3470 | 2420 | 1300 | 204 | 132 | 68 |
| 9 | 1830 | 955 | 910 | 2620 | 6690 | 3230 | 2720 | 2200 | 1110 | 192 | 120 | 75 |
| 10 | 1590 | 865 | 863 | 2470 | 7700 | 3170 | 2260 | 2010 | 946 | 184 | 109 | 71 |
| 11 | 1380 | 791 | 821 | 2310 | 8130 | 2980 | 2040 | 1890 | 833 | 177 | 100 | 63 |
| 12 | 1200 | 727 | 1540 | 2140 | 8810 | 2700 | 1900 | 1770 | 748 | 170 | 89 | 59 |
| 13 | 1030 | 669 | 4490 | 1980 | 8950 | 2410 | 3060 | 1670 | 670 | 166 | 80 | 58 |
| 14 | 896 | 604 | 5450 | 1850 | 8890 | 2140 | 3520 | 1930 | 609 | 162 | 72 | 58 |
| 15 | 792 | 577 | 6260 | 1750 | 8610 | 1940 | 3670 | 3130 | 557 | 156 | 66 | 59 |
| 16 | 716 | 550 | 6590 | 1660 | 8170 | 1810 | 3460 | 7230 | 523 | 152 | 60 | 60 |
| 17 | 664 | 535 | 6670 | 1600 | 7560 | 1770 | 3380 | 8880 | 491 | 147 | 58 | 61 |
| 18 | 635 | 538 | 6610 | 1590 | 6920 | 1750 | 3410 | 11900 | 464 | 141 | 57 | 64 |
| 19 | 604 | 522 | 6150 | 1690 | 6170 | 1730 | 3520 | 16100 | 428 | 135 | 54 | 127 |
| 20 | 569 | 501 | 5270 | 1810 | 5570 | 1780 | 3490 | 19200 | 399 | 130 | 54 | 118 |
| 21 | 541 | 643 | 4070 | 2150 | 4980 | 2200 | 3410 | 19000 | 373 | 125 | 54 | 94 |
| 22 | 575 | 2780 | 3100 | 3560 | 4510 | 2980 | 3360 | 18000 | 364 | 125 | 53 | 84 |
| 23 | 499 | 3670 | 2490 | 5130 | 4200 | 3320 | 3400 | 16900 | 335 | 130 | 51 | 77 |
| 24 | 465 | 3910 | 3390 | 5320 | 4000 | 3330 | 3480 | 14900 | 323 | 135 | 50 | 75 |
| 25 | 453 | 3420 | 3470 | 5900 | 3820 | 3230 | 4320 | 12900 | 332 | 140 | 49 | 71 |
| 26 | 435 | 3100 | 3550 | 6750 | 3670 | 3140 | 5120 | 11000 | 349 | 135 | 49 | 63 |
| 27 | 419 | 3110 | 3410 | 8230 | 3510 | 3940 | 4480 | 9250 | 356 | 132 | 48 | 60 |
| 28 | 410 | 3270 | 3260 | 9470 | 3410 | 7040 | 4060 | 7510 | 362 | 130 | 48 | 62 |
| 29 | 404 | 3430 | 3140 | 9950 | 3320 | 8040 | 3790 | 5830 | 366 | 130 | 48 | 66 |
| 30 | 485 | 3490 | 3100 | 9520 | --- | 10300 | 3600 | 4610 | 359 | 135 | 45 | 74 |
| 31 | 2030 | --- | 3050 | 8620 | --- | 11200 | --- | 3760 | --- | 140 | 43 | --- |
| TOTAL | 38722 | 52797 | 102982 | 121440 | 167450 | 112100 | 137650 | 225430 | 29917 | 5492 | 2581 | 1981 |
| MEAN | 1249 | 1760 | 3322 | 3917 | 5774 | 3616 | 4588 | 7272 | 997 | 177 | 83.3 | 66.0 |
| MAX | 3190 | 3910 | 6670 | 9950 | 8950 | 11200 | 11600 | 19200 | 3340 | 345 | 152 | 127 |
| MIN | 404 | 501 | 821 | 1590 | 3320 | 1730 | 1900 | 1670 | 323 | 125 | 43 | 40 |
| AC-FT | 76810 | 104700 | 204300 | 240900 | 332100 | 222400 | 273000 | 447100 | 59340 | 10890 | 5120 | 3930 |

CAL YR 1979 TOTAL 1553770 MEAN 4257 MAX 24100 MIN 272 AC-FT 3082000
WTR YR 1980 TOTAL 998542 MEAN 2728 MAX 19200 MIN 40 AC-FT 1981000

## 08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1945 to September 1947. Chemical and biochemical analyses: December 1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH (UNITS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 19... | 1705 | 522 | 220 | 7.0 | 15.0 | 50 | 20 | 10.6 | 103 | .9 | 42 | 17 |
| JAN 18... | 1120 | 1590 | 224 | 6.6 | 14.0 | 50 | 26 | 10.6 | 101 | 1.5 | 45 | 23 |
| MAR 27... | 1300 | 3260 | 240 | 6.6 | 14.0 | 100 | 36 | 10.3 | 99 | 2.0 | 49 | 42 |
| MAY 01... | 1805 | 3480 | 192 | 6.3 | 19.0 | 60 | 24 | 7.9 | 84 | 1.0 | 40 | 21 |
| JUN 27... | 1515 | 356 | 240 | 7.3 | 32.0 | 60 | 19 | 7.7 | 104 | .9 | 47 | 17 |
| AUG 29... | 1145 | 48 | 340 | 7.2 | 28.0 | 70 | 37 | 6.9 | 86 | 1.0 | 50 | 8 |

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 19... | 10 | 4.2 | 24 | 1.6 | 4.2 | 31 | 0 | 23 | 32 | .1 | 19 | 132 |
| JAN 18... | 11 | 4.2 | 24 | 1.6 | 3.2 | 27 | 0 | 37 | 30 | .0 | 16 | 139 |
| MAR 27... | 13 | 4.1 | 26 | 1.6 | 2.9 | 9 | 0 | 63 | 29 | .1 | 14 | 157 |
| MAY 01... | 9.4 | 3.9 | 17 | 1.2 | 3.1 | 22 | 0 | 31 | 23 | .1 | 9.2 | 108 |
| JUN 27... | 11 | 4.8 | 28 | 1.8 | 3.4 | 37 | 0 | 28 | 39 | .1 | 16 | 149 |
| AUG 29... | 12 | 4.9 | 43 | 2.6 | 4.1 | 51 | 0 | 31 | 54 | .2 | 12 | 187 |

| DATE | SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) | SOLIDS, VOLA-TILE, SUS-PENDED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | PHENOLS (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 19... | 0 | 0 | .15 | .02 | .17 | .04 | .55 | .59 | .050 | 7.1 | 0 |
| JAN 18... | 20 | 1 | .05 | .02 | .07 | .08 | .48 | .56 | .050 | 6.8 | 1 |
| MAR 27... | 5 | 5 | .07 | .01 | .08 | .06 | 1.1 | 1.2 | .090 | 12 | 5 |
| MAY 01... | 33 | 13 | .04 | .00 | .04 | .12 | 1.3 | 1.4 | .070 | 11 | 1 |
| JUN 27... | 17 | 0 | .13 | .01 | .14 | .05 | .72 | .77 | .010 | 7.6 | 3 |
| AUG 29... | 10 | 0 | .00 | .01 | .00 | .36 | 2.2 | 2.6 | .060 | 6.6 | 0 |

## 08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| NOV | | | | | | | |
| 19... | 1705 | 0 | 60 | 11 | 0 | 1 | 140 |
| JAN | | | | | | | |
| 18... | 1120 | 0 | 60 | 2 | 0 | 1 | 170 |
| MAR | | | | | | | |
| 27... | 1300 | 0 | 70 | 4 | 0 | 3 | 440 |
| JUN | | | | | | | |
| 27... | 1515 | 2 | 60 | 2 | 20 | 4 | 190 |
| AUG | | | | | | | |
| 29... | 1145 | 1 | 60 | <1 | 0 | 0 | 150 |

| DATE | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY DIS-SOLVED (UG/L AS HG) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| NOV | | | | | | |
| 19... | 25 | 90 | .0 | 0 | 0 | <3 |
| JAN | | | | | | |
| 18... | 18 | 70 | .1 | 0 | 0 | 6 |
| MAR | | | | | | |
| 27... | 51 | 120 | .2 | 0 | 0 | 9 |
| JUN | | | | | | |
| 27... | 16 | 9 | 2.3 | 0 | 0 | 5 |
| AUG | | | | | | |
| 29... | 0 | 120 | .0 | 0 | 0 | 6 |

## 08033600 BOWLES CREEK NEAR SELMAN CITY, TX
(Low-flow partial-record station)

LOCATION.--Lat 32°11'41", long 94°58'36", Rusk County, Hydrologic Unit 12020004, at bridge on State Highway 64 and 1.5 mi (2.4 km) west of Selman City.

DRAINAGE AREA.--14.5 $mi^2$ (37.6 $km^2$).

PERIOD OF RECORD.--Occasional discharge measurements and water-quality data: November 1967 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICRO-MHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 17... | 1440 | 1.7 | 1450 | 6.0 | 20.5 | 81 | 75 | 19 | 8.2 | 260 |
| NOV 28... | 1610 | 4.3 | 831 | -- | 10.0 | 61 | 54 | 14 | 6.2 | 140 |
| JAN 09... | 1340 | 6.1 | 924 | -- | 9.5 | 68 | 66 | 16 | 6.8 | 170 |
| FEB 13... | 1235 | 13 | 666 | -- | 7.5 | 65 | 61 | 16 | 6.0 | 100 |
| MAR 26... | 0905 | 6.1 | 977 | -- | 12.5 | 77 | 71 | 18 | 7.8 | 140 |
| MAY 07... | 1305 | 2.6 | 2370 | -- | 22.5 | 130 | 120 | 34 | 11 | 410 |
| JUN 18... | 1135 | 1.9 | 5500 | -- | 25.5 | 200 | 200 | 51 | 18 | 1000 |
| AUG 06... | 1215 | 1.3 | 1210 | -- | 26.0 | 70 | 28 | 17 | 6.7 | 210 |
| SEP 10... | 1150 | 1.8 | 956 | -- | 23.5 | 75 | 73 | 20 | 6.1 | 150 |

| DATE | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 17... | 13 | 4.7 | 7 | 0 | 14 | 460 | .1 | 25 | 794 |
| NOV 28... | 7.8 | 4.5 | 8 | 0 | 16 | 240 | .1 | 26 | 451 |
| JAN 09... | 9.0 | 3.4 | 2 | 0 | 22 | 270 | .1 | 29 | 518 |
| FEB 13... | 5.4 | 3.5 | 4 | 0 | 27 | 190 | .1 | 23 | 368 |
| MAR 26... | 6.9 | 8.1 | 7 | 0 | 27 | 260 | .1 | 25 | 489 |
| MAY 07... | 16 | 7.4 | 12 | 0 | 22 | 720 | .1 | 25 | 1240 |
| JUN 18... | 31 | 8.7 | 8 | 0 | 17 | 1700 | .1 | 19 | 2820 |
| AUG 06... | 11 | 3.9 | 51 | 0 | 8.1 | 360 | .2 | 17 | 648 |
| SEP 10... | 7.5 | 6.0 | 2 | 0 | 67 | 250 | .1 | 19 | 519 |

## 08033800 STRIKER CREEK RESERVOIR NEAR NEW SALEM, TX

PERIOD OF RECORD.--Chemical analyses: December 1969 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| JAN<br>09... | 1150 | 363 | 12.0 | 40 | 33 | 9.1 | 4.3 | 52 | 3.6 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| JAN<br>09... | 3.5 | 9 | 0 | 27 | 85 | .1 | 15 | 200 |

## 08033900 EAST FORK ANGELINA RIVER NEAR CUSHING, TX

**LOCATION.**--Lat 31°51'36", long 94°49'23", Rusk County, Hydrologic Unit 12020004, near left bank on downstream side of bridge on Farm Road 225, 0.1 mi (0.2 km) downstream from Everett Branch, 0.9 mi (1.4 km) upstream from Reagan Branch, 3.5 mi (5.6 km) north of Cushing, and 8 mi (13 km) upstream from Angelina River.

**DRAINAGE AREA.**--158 mi$^2$ (409 km$^2$).

**PERIOD OF RECORD.**--January 1964 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 275.29 ft (83.908 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Records good. No known diversion above station. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--16 years, 112 ft$^3$/s (3.172 m$^3$/s), 9.63 in/yr (245 mm/yr), 81,140 acre-ft/yr (100 hm$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 19,500 ft$^3$/s (552 m$^3$/s) Apr. 12, 1980, gage height, 13.34 ft (4.066 m), from rating curve extended above 4,600 ft$^3$/s (130 m$^3$/s) on basis of area-velocity study; minimum, 0.7 ft$^3$/s (0.020 m$^3$/s) Aug. 14, 1964.

**EXTREMES FOR CURRENT YEAR.**--Peak discharges above base of 1,000 ft$^3$/s (28.3 m$^3$/s) and maximum (*):

| Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nov. 22 | 1800 | 1,850 | 52.4 | 10.22 | 3.115 | Apr. 12 | 0730 | *19,500 | 552 | 13.34 | 4.066 |
| Jan. 23 | 0900 | 2,200 | 62.3 | 10.39 | 3.167 | May 16 | 1400 | 4,620 | 131 | 10.99 | 3.350 |
| Feb. 10 | 0900 | 1,460 | 41.3 | 10.06 | 3.066 | | | | | | |

Minimum discharge, 7.4 ft$^3$/s (0.21 m$^3$/s) Aug. 25, 26.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 49 | 159 | 91 | 132 | 334 | 113 | 114 | 129 | 87 | 28 | 16 | 20 |
| 2 | 46 | 86 | 89 | 120 | 221 | 119 | 106 | 148 | 83 | 26 | 15 | 17 |
| 3 | 43 | 60 | 87 | 122 | 174 | 107 | 104 | 166 | 79 | 25 | 13 | 15 |
| 4 | 40 | 52 | 85 | 130 | 158 | 106 | 98 | 138 | 75 | 24 | 13 | 14 |
| 5 | 37 | 49 | 90 | 117 | 151 | 108 | 89 | 116 | 72 | 24 | 13 | 12 |
| 6 | 37 | 47 | 90 | 110 | 154 | 102 | 84 | 106 | 68 | 23 | 13 | 11 |
| 7 | 37 | 46 | 87 | 109 | 141 | 99 | 85 | 100 | 65 | 22 | 12 | 10 |
| 8 | 37 | 46 | 82 | 105 | 215 | 102 | 83 | 97 | 63 | 22 | 11 | 13 |
| 9 | 37 | 48 | 79 | 101 | 847 | 99 | 74 | 94 | 62 | 22 | 11 | 17 |
| 10 | 37 | 52 | 77 | 99 | 1390 | 95 | 69 | 89 | 63 | 21 | 11 | 18 |
| 11 | 36 | 48 | 78 | 104 | 952 | 93 | 158 | 86 | 59 | 20 | 10 | 15 |
| 12 | 35 | 45 | 114 | 102 | 594 | 102 | 8620 | 128 | 55 | 19 | 11 | 13 |
| 13 | 34 | 43 | 342 | 92 | 313 | 112 | 3150 | 308 | 51 | 18 | 14 | 11 |
| 14 | 34 | 42 | 405 | 91 | 214 | 93 | 2350 | 381 | 49 | 17 | 14 | 9.8 |
| 15 | 32 | 42 | 249 | 90 | 194 | 84 | 1180 | 403 | 48 | 17 | 13 | 9.4 |
| 16 | 32 | 43 | 148 | 104 | 182 | 95 | 700 | 3080 | 47 | 17 | 14 | 9.2 |
| 17 | 34 | 44 | 121 | 160 | 163 | 129 | 436 | 2330 | 45 | 16 | 16 | 8.5 |
| 18 | 36 | 45 | 106 | 165 | 152 | 130 | 288 | 1320 | 42 | 16 | 13 | 8.6 |
| 19 | 36 | 48 | 102 | 124 | 149 | 100 | 231 | 734 | 41 | 16 | 12 | 8.8 |
| 20 | 35 | 51 | 101 | 206 | 146 | 119 | 195 | 419 | 49 | 17 | 11 | 10 |
| 21 | 34 | 299 | 101 | 480 | 140 | 138 | 175 | 215 | 94 | 17 | 10 | 11 |
| 22 | 42 | 1410 | 115 | 1270 | 131 | 109 | 160 | 174 | 73 | 23 | 9.5 | 12 |
| 23 | 68 | 1180 | 245 | 1850 | 124 | 100 | 150 | 157 | 55 | 25 | 9.1 | 11 |
| 24 | 51 | 700 | 586 | 980 | 119 | 142 | 144 | 142 | 51 | 20 | 8.4 | 9.8 |
| 25 | 42 | 365 | 593 | 582 | 114 | 137 | 197 | 133 | 45 | 18 | 7.9 | 13 |
| 26 | 38 | 159 | 537 | 324 | 108 | 108 | 416 | 127 | 39 | 16 | 7.7 | 33 |
| 27 | 36 | 127 | 234 | 201 | 106 | 136 | 445 | 119 | 36 | 16 | 9.4 | 31 |
| 28 | 35 | 115 | 152 | 169 | 107 | 357 | 223 | 109 | 33 | 22 | 13 | 23 |
| 29 | 36 | 103 | 154 | 189 | 107 | 336 | 152 | 102 | 31 | 24 | 15 | 21 |
| 30 | 46 | 94 | 178 | 320 | --- | 187 | 134 | 97 | 29 | 22 | 29 | 31 |
| 31 | 164 | --- | 154 | 371 | --- | 132 | --- | 91 | --- | 19 | 27 | --- |
| TOTAL | 1336 | 5648 | 5672 | 9119 | 7900 | 3989 | 20410 | 11838 | 1689 | 632 | 402.0 | 446.1 |
| MEAN | 43.1 | 188 | 183 | 294 | 272 | 129 | 680 | 382 | 56.3 | 20.4 | 13.0 | 14.9 |
| MAX | 164 | 1410 | 593 | 1850 | 1390 | 357 | 8620 | 3080 | 94 | 28 | 29 | 33 |
| MIN | 32 | 42 | 77 | 90 | 106 | 84 | 69 | 86 | 29 | 16 | 7.7 | 8.5 |
| CFSM | .27 | 1.19 | 1.16 | 1.86 | 1.72 | .82 | 4.30 | 2.42 | .36 | .13 | .08 | .09 |
| IN. | .31 | 1.33 | 1.34 | 2.15 | 1.86 | .94 | 4.81 | 2.79 | .40 | .15 | .09 | .11 |
| AC-FT | 2650 | 11200 | 11250 | 18090 | 15670 | 7910 | 40480 | 23480 | 3350 | 1250 | 797 | 885 |

CAL YR 1979 TOTAL 88759.0 MEAN 243 MAX 3490 MIN 18 CFSM 1.54 IN 20.90 AC-FT 176100
WTR YR 1980 TOTAL 69081.1 MEAN 189 MAX 8620 MIN 7.7 CFSM 1.20 IN 16.26 AC-FT 137000

## 08034000 LAKE TYLER NEAR WHITEHOUSE, TX

**LOCATION.**--Lat 32°14'30", long 95°10'33", Smith County, Hydrologic Unit 12020004, at city of Tyler pumphouse, 2.0 mi (3.2 km) north of Whitehouse Dam on Prairie Creek, 3.0 mi (4.8 km) northwest of Mud Creek, and 3.2 mi (5.1 km) northeast of Whitehouse.

**DRAINAGE AREA.**--107 mi$^2$ (277 km$^2$). Prior to May 29, 1968, 45.3 mi$^2$ (117.3 km$^2$).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--March 1949 to current year.

**GAGE.**--Water-stage recorder and crest-stages gages. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 3, 1949, nonrecording gage at dam. May 3, 1949, to July 11, 1951, nonrecording gage at pumphouse. July 12, 1951, to Feb. 1, 1968, water-stage recorder at intake tower in lake 660 ft (201 m) south of pumphouse. All gages at same datum.

**REMARKS.**--Originally Lake Tyler was formed by Whitehouse Dam. Deliberate impoundment began Jan. 8, 1949, and the dam was completed May 13, 1949. The construction of Mud Creek Dam began Feb. 11, 1966, and deliberate impoundment began Nov. 22, 1966; final completion of dam was in January 1967. Whitehouse Dam is a rolled earthfill dam with an uncontrolled concrete spillway 200 ft (61 m) wide near left end of dam. Mud Creek Dam is a rolled earthfill dam with an uncontrolled concrete spillway 300 ft (91 m) wide near center of dam. On May 29, 1968, the lakes were joined through an interconnecting canal. An 18-inch (457 mm) conduit through the embankment of Mud Creek Dam serves as a low-flow outlet. Water is used for municipal supply for the cities of Tyler, Troop, and Whitehouse. The dam is owned and operated by the city of Tyler. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam........................................................ | 390.0 to 391.5 | - |
| Design flood........................................................ | 386.0 | - |
| Crest of spillways........................................................ | 375.4 | 80,900 |
| Bottom of interconnecting canal between lakes........................ | 355.0 | 14,480 |
| Lowest gated outlet (invert at Mud Creek Dam)........................ | 350.0 | 7,200 |

**COOPERATION.**--The capacity tables, furnished by the city of Tyler, are based on surveys made in 1948-49 and 1966-67.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 87,340 acre-ft (108 hm$^3$) Feb. 3, 1975, elevation, 376.71 ft (114.821 m); maximum elevation, 378.3 ft (115.31 m) Apr. 24, 1966, prior to adjoining of lakes; minimum contents since joining of lakes, 63,100 acre-ft (77.8 hm$^3$) Nov. 13, 1978, elevation, 371.44 ft (113.215 m).

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 84,120 acre-ft (104 hm$^3$) May 16, elevation, 376.06 ft (114.623 m); minimum, 67,800 acre-ft (83.6 hm$^3$) Sept. 29, elevation, 372.54 ft (113.550 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 372.0 | 65,470 | 375.0 | 79,000 |
| 373.0 | 69,820 | 376.0 | 83,820 |
| 374.0 | 74,330 | 377.0 | 88,800 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 80770 | 79810 | 80770 | 81440 | 81340 | 81150 | 81680 | 81150 | 80670 | 78430 | 74010 | 69780 |
| 2 | 80670 | 79760 | 80770 | 81340 | 81290 | 81290 | 81580 | 81540 | 80630 | 78290 | 73920 | 69690 |
| 3 | 80630 | 79720 | 80770 | 81440 | 81290 | 81250 | 81490 | 81390 | 80670 | 78100 | 73740 | 69510 |
| 4 | 80390 | 79670 | 80820 | 81390 | 81290 | 81390 | 81390 | 81340 | 80580 | 77960 | 73560 | 69430 |
| 5 | 80340 | 79670 | 80820 | 81290 | 81250 | 81340 | 81340 | 81250 | 80480 | 77770 | 73380 | 69250 |
| 6 | 80240 | 79570 | 80770 | 81340 | 81290 | 81390 | 81340 | 81100 | 80480 | 77630 | 73200 | 69210 |
| 7 | 80200 | 79480 | 80820 | 81250 | 81290 | 81440 | 81340 | 81060 | 80340 | 77540 | 73060 | 69120 |
| 8 | 80150 | 79480 | 80770 | 81150 | 83000 | 81440 | 81250 | 80910 | 80390 | 77350 | 72880 | 69290 |
| 9 | 80000 | 79810 | 80820 | 81150 | 83430 | 81440 | 81200 | 80960 | 80290 | 77160 | 72740 | 69250 |
| 10 | 79960 | 79720 | 80820 | 81200 | 82950 | 81440 | 81100 | 80860 | 80200 | 77020 | 72560 | 69160 |
| 11 | 79860 | 79720 | 80860 | 81060 | 82510 | 81490 | 81490 | 80960 | 80050 | 76780 | 72420 | 69120 |
| 12 | 79760 | 79620 | 81970 | 81060 | 82220 | 81730 | 82170 | 81970 | 80000 | 76590 | 72330 | 68940 |
| 13 | 79720 | 79620 | 81970 | 81010 | 82120 | 81580 | 83340 | 82070 | 79910 | 76460 | 72200 | 68810 |
| 14 | 79620 | 79620 | 81730 | 81060 | 82020 | 81540 | 83000 | 81930 | 79760 | 76270 | 71970 | 68770 |
| 15 | 79530 | 79570 | 81630 | 81100 | 81880 | 81490 | 82510 | 83430 | 79670 | 76090 | 72060 | 68680 |
| 16 | 79480 | 79570 | 81390 | 81150 | 81630 | 81490 | 82220 | 83820 | 79570 | 75850 | 71930 | 68510 |
| 17 | 79530 | 79530 | 81290 | 81150 | 81680 | 81340 | 81970 | 83040 | 79480 | 75760 | 71750 | 68370 |
| 18 | 79530 | 79570 | 81250 | 81150 | 81630 | 81340 | 81730 | 82510 | 79330 | 75580 | 71610 | 68730 |
| 19 | 79430 | 79620 | 81250 | 81150 | 81630 | 81340 | 81580 | 82120 | 79240 | 75350 | 71520 | 68680 |
| 20 | 79330 | 79620 | 81250 | 81150 | 81680 | 81290 | 81540 | 81830 | 79530 | 75210 | 71390 | 68590 |
| 21 | 79290 | 81150 | 81340 | 81540 | 81680 | 81250 | 81440 | 81540 | 79530 | 75160 | 71250 | 68460 |
| 22 | 79570 | 81250 | 82460 | 83240 | 81630 | 81250 | 81340 | 81440 | 79570 | 75020 | 71070 | 68370 |
| 23 | 79530 | 81290 | 83190 | 82950 | 81630 | 81440 | 81340 | 81340 | 79480 | 74880 | 70980 | 68290 |
| 24 | 79480 | 81200 | 83000 | 82410 | 81580 | 81390 | 81100 | 81290 | 79380 | 74750 | 70760 | 68200 |
| 25 | 79430 | 81150 | 82610 | 82070 | 81440 | 81340 | 81580 | 81250 | 79190 | 74560 | 70630 | 68160 |
| 26 | 79380 | 81100 | 82220 | 81880 | 81390 | 81250 | 81540 | 81200 | 79100 | 74280 | 70450 | 68070 |
| 27 | 79330 | 81010 | 82070 | 81680 | 81440 | 81540 | 81440 | 81060 | 78760 | 74750 | 70360 | 67890 |
| 28 | 79290 | 80860 | 81930 | 81630 | 81440 | 81580 | 81290 | 81010 | 78810 | 74650 | 70180 | 67850 |
| 29 | 79240 | 80770 | 81830 | 81580 | 81540 | 81930 | 81290 | 80960 | 78620 | 74470 | 70130 | 68070 |
| 30 | 79810 | 80770 | 81680 | 81540 | --- | 81830 | 81200 | 80860 | 78530 | 74420 | 70040 | 67980 |
| 31 | 79860 | --- | 81580 | 81390 | --- | 81780 | --- | 80820 | --- | 74240 | 69910 | --- |
| MAX | 80770 | 81290 | 83190 | 83240 | 83430 | 81930 | 83340 | 83820 | 80670 | 78430 | 74010 | 69780 |
| MIN | 79240 | 79480 | 80770 | 81010 | 81250 | 81150 | 81100 | 80820 | 78530 | 74240 | 69910 | 67850 |
| (†) | 375.18 | 375.37 | 375.54 | 375.50 | 375.53 | 375.58 | 375.46 | 375.38 | 374.90 | 373.98 | 373.02 | 372.58 |
| (‡) | -970 | +910 | +810 | -190 | +150 | +240 | -580 | -380 | -2290 | -4290 | -4330 | -1930 |
| (††) | 981 | 860 | 904 | 885 | 903 | 1020 | 901 | 867 | 1370 | 1900 | 1800 | 1190 |

CAL YR 1979 MAX 85800 MIN 67650 ‡ +14200 †† 11670
WTR YR 1980 MAX 83820 MIN 67850 ‡ -12580 †† 13580

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal use by city of Tyler.

## 08034000 LAKE TYLER NEAR WHITEHOUSE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1976 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 09... | 1635 | 95 | 10.5 | 21 | 6 | 5.4 | 1.9 | 7.2 | .7 |

| DATE | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | |
| 09... | 2.8 | 19 | 0 | 10 | 10 | .1 | 13 | 60 |

## 08036500 ANGELINA RIVER NEAR ALTO, TX

LOCATION.--Lat 31°40'10", long 94°57'24", Nacogdoches-Cherokee County line, Hydrologic Unit 12020004, near center of rectified channel at downstream side of pier of bridge on State Highway 21, 0.4 mi (0.6 km) upstream from Allen Creek, 1.5 mi (2.4 km) upstream from Bingham Creek, 7.5 mi (12.1 km) east of Alto, and 149.3 mi (240.2 km) upstream from mouth.

DRAINAGE AREA.--1,276 mi$^2$ (3,305 km$^2$).

PERIOD OF RECORD.--May to August 1940 (discharge measurements only), September 1940 to March 1949 (fragmentary for 1941-42, 1944-49), February 1959 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 204.30 ft (62.271 m) National Geodetic Vertical Datum of 1929. May 9, 1940, to Mar. 31, 1949, nonrecording gage on bridge at natural channel 1,400 ft (427 m) to right at same datum. Feb. 18 to Sept. 15, 1959, nonrecording gage at present site and datum.

REMARKS.--Records good. No large diversion above station. Flow partly regulated since May 1957 by Lake Striker 35.5 mi (57.1 km) upstream and Lake Tyler 69.9 mi (112.5 km) upstream since January 1949, combined capacity, 110,700 acre-ft (136 hm$^3$). Recording rain gage at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--22 years (water years 1943, 1960-80), 796 ft$^3$/s (22.54 m$^3$/s), 576,700 acre-ft/yr (711 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,600 ft$^3$/s (867 m$^3$/s) Apr. 28, 1966, gage height, 21.51 ft (6.556 m), but may have been higher during period of no gage-height record in November 1940; minimum, 2.0 ft$^3$/s (0.057 m$^3$/s) Aug. 14, 15, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1905, about 22 ft (6.7 m) in May 1908, from information by local residents. Flood in 1932 reached a stage of 21.5 ft (6.55 m), and flood in May 1958 reached a stage of 20.3 ft (6.19 m), from floodmarks and information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,970 ft$^3$/s (282 m$^3$/s) Apr. 16 at 1600 hours, gage height, 18.75 ft (5.715 m); minimum daily, 34 ft$^3$/s (0.96 m$^3$/s) Aug. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1370 | 549 | 1040 | 3040 | 3090 | 888 | 1230 | 1320 | 481 | 92 | 109 | 135 |
| 2 | 845 | 632 | 872 | 2700 | 2730 | 896 | 1180 | 1180 | 425 | 84 | 102 | 111 |
| 3 | 475 | 672 | 734 | 2300 | 2460 | 894 | 1120 | 1060 | 381 | 77 | 92 | 98 |
| 4 | 314 | 700 | 644 | 1950 | 2220 | 892 | 964 | 1050 | 343 | 73 | 85 | 87 |
| 5 | 295 | 672 | 595 | 1630 | 2010 | 842 | 833 | 1040 | 314 | 69 | 79 | 80 |
| 6 | 299 | 507 | 560 | 1370 | 1810 | 751 | 824 | 1020 | 298 | 66 | 74 | 76 |
| 7 | 285 | 336 | 491 | 1170 | 1640 | 705 | 827 | 920 | 313 | 64 | 71 | 72 |
| 8 | 218 | 266 | 413 | 1040 | 1540 | 693 | 782 | 754 | 294 | 62 | 69 | 70 |
| 9 | 165 | 237 | 370 | 976 | 1920 | 671 | 713 | 683 | 242 | 59 | 68 | 68 |
| 10 | 147 | 220 | 350 | 940 | 2080 | 645 | 644 | 687 | 218 | 57 | 67 | 69 |
| 11 | 138 | 207 | 340 | 920 | 2140 | 622 | 598 | 674 | 206 | 56 | 66 | 75 |
| 12 | 133 | 227 | 377 | 898 | 2510 | 614 | 1940 | 638 | 197 | 54 | 66 | 91 |
| 13 | 127 | 339 | 517 | 865 | 3100 | 624 | 2440 | 822 | 189 | 51 | 65 | 95 |
| 14 | 120 | 417 | 552 | 836 | 3630 | 659 | 3900 | 918 | 180 | 48 | 64 | 85 |
| 15 | 117 | 386 | 606 | 808 | 4020 | 669 | 7170 | 1160 | 166 | 47 | 65 | 67 |
| 16 | 116 | 262 | 739 | 787 | 3990 | 727 | 9600 | 3560 | 152 | 45 | 67 | 54 |
| 17 | 115 | 206 | 849 | 827 | 3680 | 794 | 8990 | 3120 | 140 | 44 | 69 | 47 |
| 18 | 113 | 191 | 927 | 827 | 3190 | 827 | 7690 | 3330 | 131 | 43 | 69 | 44 |
| 19 | 110 | 182 | 938 | 815 | 2770 | 847 | 6450 | 4270 | 123 | 42 | 69 | 42 |
| 20 | 112 | 176 | 878 | 817 | 2350 | 890 | 5170 | 4920 | 121 | 41 | 68 | 40 |
| 21 | 113 | 501 | 811 | 931 | 2000 | 836 | 4140 | 5030 | 148 | 43 | 57 | 39 |
| 22 | 126 | 1190 | 815 | 1560 | 1690 | 715 | 3320 | 4940 | 155 | 63 | 47 | 40 |
| 23 | 136 | 870 | 1020 | 1930 | 1420 | 662 | 2680 | 4480 | 172 | 71 | 43 | 39 |
| 24 | 143 | 908 | 1760 | 2080 | 1200 | 688 | 2140 | 3750 | 230 | 72 | 40 | 39 |
| 25 | 173 | 1150 | 1660 | 2810 | 1020 | 683 | 1740 | 3060 | 244 | 81 | 38 | 45 |
| 26 | 192 | 1330 | 1810 | 3830 | 903 | 684 | 1480 | 2460 | 211 | 85 | 36 | 57 |
| 27 | 174 | 1460 | 2240 | 4500 | 836 | 742 | 1260 | 1900 | 173 | 80 | 34 | 69 |
| 28 | 154 | 1470 | 2820 | 4740 | 849 | 1010 | 1230 | 1430 | 139 | 81 | 39 | 108 |
| 29 | 142 | 1380 | 3230 | 4550 | 872 | 1070 | 1320 | 1020 | 116 | 81 | 54 | 103 |
| 30 | 151 | 1230 | 3410 | 4050 | --- | 1140 | 1380 | 702 | 102 | 84 | 63 | 87 |
| 31 | 495 | --- | 3300 | 3550 | --- | 1190 | --- | 549 | --- | 93 | 102 | --- |
| TOTAL | 7613 | 18873 | 35668 | 60047 | 63670 | 24570 | 83755 | 62447 | 6604 | 2008 | 2037 | 2132 |
| MEAN | 246 | 629 | 1151 | 1937 | 2196 | 793 | 2792 | 2014 | 220 | 64.8 | 65.7 | 71.1 |
| MAX | 1370 | 1470 | 3410 | 4740 | 4020 | 1190 | 9600 | 5030 | 481 | 93 | 109 | 135 |
| MIN | 110 | 176 | 340 | 787 | 836 | 614 | 598 | 549 | 102 | 41 | 34 | 39 |
| AC-FT | 15100 | 37430 | 70750 | 119100 | 126300 | 48730 | 166100 | 123900 | 13100 | 3980 | 4040 | 4230 |
| (††) | 1.96 | 5.20 | 4.18 | 3.58 | 1.87 | 2.41 | 1.79 | 7.13 | .80 | .50 | 1.27 | .78 |

CAL YR 1979 TOTAL 533825 MEAN 1463 MAX 9040 MIN 66 AC-FT 1059000 †† 59.65
WTR YR 1980 TOTAL 369424 MEAN 1009 MAX 9600 MIN 34 AC-FT 732800 †† 31.47

†† Rainfall, in inches.

## 08036700 LAKE NACOGDOCHES NEAR NACOGDOCHES, TX

LOCATION.--Lat 31°35'19", long 94°49'31", Nacogdoches County, Hydrologic Unit 12020004, at upstream side of dam on Bayou Loco near service outlet tower and 10 mi (16 km) west of Nacogdoches.

DRAINAGE AREA.--87.9 mi$^2$ (227.7 km$^2$).

PERIOD OF RECORD.--March 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam. Deliberate impoundment began July 14, 1976. Water is used for industrial and municipal supply by the city of Nacogdoches. The emergency spillway is an uncontrolled 500-foot-wide (150 m) cut through natural ground located near the right end of the dam. There is an uncontrolled drop inlet with a 20.5-foot-diameter (6.2 m) top opening that is connected to an 8- by 7-foot (2.4 by 2.1 m) conduit that extends through the dam. A separate multi-gated inlet tower is connected to a valve box by a 30-inch (762 mm) conduit through the dam. The valve box directs water to a purificiation plant. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam.......................................................... | 303.0 | - |
| Top of design flood.................................................. | 298.5 | 102,900 |
| Crest of spillway.................................................... | 286.0 | 59,570 |
| Crest of drop inlet (top of conservation pool)....................... | 279.0 | 42,320 |
| Lowest gated outlet (invert of 30 in conduit)........................ | 238.25 | 254 |

COOPERATION.--The capacity table, furnished by the city of Nacogdoches, is based on Geological Survey topographic maps dated 1952.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 53,550 acre-ft (66.0 hm$^3$) June 3, 1979, elevation, 283.76 ft (86.490 m); minimum since first appreciable storage, 20,540 acre-ft (25.3 hm$^3$) Nov. 26, 1977, elevation, 266.62 ft (81.266 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 52,420 acre-ft (64.6 hm$^3$) Apr. 12, elevation, 283.32 ft (86.356 m); minimum, 36,250 acre-ft (44.7 hm$^3$) Sept. 30, elevation, 276.05 ft (84.140 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 276.0 | 36,140 | 281.0 | 47,770 |
| 278.0 | 40,200 | 284.0 | 54,160 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 42050 | 41680 | 42500 | 42850 | 43280 | 42390 | 42930 | 42350 | 42350 | 41250 | 39080 | 37520 |
| 2 | 41960 | 41660 | 42480 | 42760 | 43190 | 42330 | 42780 | 42290 | 42260 | 41190 | 39020 | 37460 |
| 3 | 41920 | 41600 | 42390 | 42670 | 43100 | 42310 | 42670 | 42240 | 42240 | 41120 | 38960 | 37420 |
| 4 | 41790 | 41550 | 42330 | 42610 | 43020 | 42310 | 42570 | 42240 | 42180 | 41040 | 38900 | 37360 |
| 5 | 41700 | 41550 | 42330 | 42540 | 42950 | 42290 | 42500 | 42200 | 42130 | 40990 | 38840 | 37280 |
| 6 | 41700 | 41550 | 42220 | 42480 | 42910 | 42260 | 42460 | 42160 | 42070 | 40930 | 38780 | 37220 |
| 7 | 41660 | 41510 | 42200 | 42410 | 42820 | 42260 | 42410 | 42110 | 42030 | 40650 | 38720 | 37180 |
| 8 | 41640 | 41510 | 42180 | 42370 | 43230 | 42260 | 42370 | 42070 | 42010 | 40580 | 38660 | 37140 |
| 9 | 41600 | 41490 | 42130 | 42330 | 44730 | 42240 | 42330 | 42030 | 41960 | 40500 | 38600 | 37100 |
| 10 | 41550 | 41440 | 42130 | 42290 | 45030 | 42240 | 42330 | 41980 | 41900 | 40430 | 38530 | 37100 |
| 11 | 41510 | 41400 | 42180 | 42240 | 44700 | 42240 | 42570 | 41940 | 41810 | 40370 | 38470 | 36980 |
| 12 | 41490 | 41400 | 42650 | 42200 | 44310 | 42260 | 52240 | 41920 | 41770 | 40280 | 38410 | 36910 |
| 13 | 41470 | 41340 | 43080 | 42160 | 44010 | 42220 | 49140 | 42350 | 41730 | 40220 | 38370 | 36890 |
| 14 | 41380 | 41290 | 43040 | 42130 | 43790 | 42180 | 48130 | 42570 | 41640 | 40150 | 38330 | 36850 |
| 15 | 41380 | 41270 | 42950 | 42110 | 43600 | 42180 | 46790 | 43430 | 41600 | 40070 | 38290 | 36830 |
| 16 | 41380 | 41250 | 42820 | 42090 | 43410 | 42260 | 45580 | 48180 | 41550 | 40010 | 38250 | 36770 |
| 17 | 41340 | 41250 | 42720 | 42070 | 43260 | 42350 | 44570 | 48180 | 41530 | 39930 | 38210 | 36670 |
| 18 | 41320 | 41230 | 42610 | 42050 | 43130 | 42310 | 44070 | 47770 | 41490 | 39870 | 38170 | 36650 |
| 19 | 41320 | 41250 | 42520 | 42030 | 43040 | 42310 | 43640 | 46630 | 41440 | 39770 | 38130 | 36630 |
| 20 | 41270 | 41250 | 42440 | 42240 | 42950 | 42460 | 43320 | 45650 | 41750 | 39730 | 38090 | 36650 |
| 21 | 41250 | 43320 | 42350 | 42460 | 42910 | 42570 | 43100 | 44830 | 41770 | 39690 | 38070 | 36570 |
| 22 | 41400 | 44420 | 42290 | 44510 | 42820 | 42440 | 42930 | 44290 | 41750 | 39630 | 38050 | 36530 |
| 23 | 41290 | 44180 | 42460 | 45060 | 42760 | 42440 | 42780 | 43970 | 41680 | 39550 | 38010 | 36490 |
| 24 | 41210 | 43900 | 43210 | 44460 | 42630 | 42570 | 42650 | 43640 | 41640 | 39490 | 37930 | 36450 |
| 25 | 41140 | 43580 | 43210 | 44120 | 42570 | 42440 | 42780 | 43320 | 41600 | 39390 | 37890 | 36430 |
| 26 | 41120 | 43340 | 43020 | 43790 | 42540 | 42350 | 42890 | 43040 | 41550 | 39340 | 37830 | 36410 |
| 27 | 41140 | 43130 | 42820 | 43560 | 42520 | 43040 | 42690 | 42890 | 41510 | 39340 | 37810 | 36390 |
| 28 | 41120 | 42910 | 42720 | 43430 | 42480 | 43540 | 42570 | 42760 | 41440 | 39320 | 37740 | 36350 |
| 29 | 41120 | 42760 | 42820 | 43640 | 42440 | 43430 | 42500 | 42630 | 41380 | 39260 | 37700 | 36290 |
| 30 | 41490 | 42610 | 43020 | 43470 | --- | 43210 | 42440 | 42520 | 41320 | 39200 | 37620 | 36250 |
| 31 | 41700 | --- | 42930 | 43380 | --- | 43080 | --- | 42410 | --- | 39140 | 37540 | --- |
| MAX | 42050 | 44420 | 43210 | 45060 | 45030 | 43540 | 52240 | 48180 | 42350 | 41250 | 39080 | 37520 |
| MIN | 41120 | 41230 | 42130 | 42030 | 42440 | 42180 | 42330 | 41920 | 41320 | 39140 | 37540 | 36250 |
| (†) | 278.70 | 279.12 | 279.27 | 279.48 | 279.04 | 279.34 | 279.04 | 279.03 | 278.52 | 277.48 | 276.69 | 276.05 |
| (‡) | -390 | +910 | +320 | +450 | -940 | +640 | -640 | -30 | -1090 | -2180 | -1600 | -1290 |
| (††) | 242 | 226 | 215 | 243 | 222 | 207 | 171 | 154 | 394 | 509 | 448 | 416 |

CAL YR 1979 MAX 53420 MIN 31510 ‡ +12510 †† 2507
WTR YR 1980 MAX 52240 MIN 36250 ‡ -5840 †† 3447

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, by the city of Nacogdoches.

NOTE: No gage-height record Dec. 17 to Jan. 23, Mar. 17 to Apr. 14, Apr. 17 to May 28, July 28 to Aug. 22, and Sept. 26-30.

## 08037050 BAYOU LANANA AT NACOGDOCHES, TX

**LOCATION.**--Lat 31°36'58", long 94°38'28", Nacogdoches County, Hydrologic Unit 12020005, on right bank at downstream side of bridge on Farm Road 1878 in Nacogdoches and 14.5 mi (23.3 km) upstream from mouth.

**DRAINAGE AREA.**--31.3 mi² (81.1 km²).

**PERIOD OF RECORD.**--October 1964 to current year.

**GAGE.**--Water-stage recorder. Prior to July 1974, concrete control. Datum of gage is 264.23 ft (80.537 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Records fair. No diversion above station. Several observations of water temperature in addition to those made during chemical-quality sampling were made during the year.

**AVERAGE DISCHARGE.**--16 years, 31.1 ft³/s (0.881 m³/s), 13.49 in/yr (343 mm/yr), 22,530 acre-ft/yr (27.8 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 13,500 ft³/s (382 m³/s) June 2, 1979, gage height, 22.18 ft (6.760 m), from rating curve extended above 2,800 ft³/s (79.3 m³/s) on basis of indirect measurement of peak flow; no flow at times.

Maximum stage since at least 1956, that of June 2, 1979.

**EXTREMES FOR CURRENT YEAR.**--Peak discharges above base of 1,100 ft³/s (31.2 m³/s) and maximum (*):

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| Nov. 21 | 2000 | 1,840 | 52.1 | 15.57 | 4.746 |
| Jan. 22 | 1700 | 1,160 | 32.9 | 12.88 | 3.926 |
| May 16 | 0400 | *2,930 | 83.0 | 17.17 | 5.233 |

Minimum discharge, 0.04 ft³/s (0.001 m³/s) Aug. 25, 26.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .28 | 6.6 | 12 | 28 | 43 | 22 | 20 | 4.5 | 10 | .79 | .43 | .25 |
| 2 | .20 | 3.1 | 11 | 26 | 39 | 17 | 22 | 11 | 9.6 | .70 | .43 | .15 |
| 3 | .18 | 2.6 | 10 | 32 | 35 | 17 | 19 | 5.0 | 8.2 | .49 | .37 | .11 |
| 4 | .17 | 1.7 | 10 | 27 | 32 | 19 | 14 | 3.1 | 7.9 | .49 | .37 | .08 |
| 5 | .14 | 1.6 | 10 | 24 | 32 | 19 | 12 | 2.1 | 7.2 | .49 | .37 | .10 |
| 6 | .15 | 1.6 | 9.6 | 24 | 30 | 16 | 12 | 1.6 | 6.3 | .43 | .37 | .13 |
| 7 | .16 | 1.2 | 8.2 | 22 | 27 | 17 | 12 | 1.3 | 6.0 | .37 | .33 | 1.1 |
| 8 | .27 | 1.2 | 7.5 | 21 | 160 | 16 | 9.2 | 1.1 | 5.2 | .35 | .35 | .29 |
| 9 | .43 | 4.0 | 7.2 | 20 | 479 | 15 | 7.9 | .88 | 5.0 | .35 | .35 | 3.1 |
| 10 | .34 | 1.2 | 7.5 | 21 | 157 | 15 | 7.2 | .62 | 5.0 | .33 | .29 | .55 |
| 11 | .26 | .88 | 7.5 | 22 | 79 | 15 | 32 | .55 | 4.2 | .29 | .29 | .29 |
| 12 | .31 | .79 | 247 | 19 | 57 | 20 | 456 | 7.2 | 3.5 | .25 | 24 | .21 |
| 13 | .29 | .79 | 198 | 19 | 49 | 15 | 763 | 13 | 3.3 | .25 | 1.1 | .10 |
| 14 | .23 | .70 | 63 | 19 | 44 | 13 | 144 | 17 | 3.1 | .25 | .25 | .09 |
| 15 | .23 | .70 | 41 | 18 | 43 | 13 | 57 | 296 | 3.1 | .25 | .18 | .08 |
| 16 | .30 | .70 | 33 | 21 | 37 | 22 | 31 | 1200 | 2.6 | .25 | .15 | .08 |
| 17 | .37 | .79 | 25 | 21 | 33 | 28 | 24 | 327 | 2.4 | .25 | .11 | .07 |
| 18 | .32 | .88 | 23 | 19 | 32 | 17 | 21 | 80 | 2.1 | .25 | .11 | .07 |
| 19 | .31 | .98 | 22 | 18 | 31 | 20 | 16 | 84 | 1.9 | .21 | .10 | .10 |
| 20 | .29 | .98 | 21 | 50 | 29 | 73 | 13 | 45 | 75 | .21 | .08 | 2.0 |
| 21 | .23 | 1000 | 21 | 77 | 28 | 41 | 10 | 37 | 15 | .33 | .08 | 1.0 |
| 22 | 100 | 489 | 32 | 759 | 24 | 27 | 8.5 | 29 | 5.7 | .37 | .06 | .30 |
| 23 | 2.3 | 198 | 129 | 189 | 23 | 30 | 6.3 | 22 | 5.2 | .37 | .08 | .15 |
| 24 | .98 | 54 | 181 | 78 | 22 | 37 | 7.2 | 20 | 3.5 | .29 | .10 | .10 |
| 25 | .79 | 36 | 52 | 57 | 20 | 26 | 76 | 18 | 2.4 | .29 | .08 | 100 |
| 26 | .62 | 26 | 38 | 51 | 19 | 25 | 34 | 16 | 1.9 | .25 | .06 | 50 |
| 27 | .55 | 21 | 32 | 42 | 20 | 163 | 10 | 14 | 1.6 | 12 | .10 | 10 |
| 28 | .62 | 15 | 29 | 37 | 19 | 171 | 6.0 | 13 | 1.3 | 3.1 | .15 | 2.0 |
| 29 | .70 | 14 | 54 | 77 | 19 | 69 | 4.7 | 12 | 1.1 | .88 | .25 | 1.0 |
| 30 | 92 | 13 | 41 | 85 | --- | 40 | 4.2 | 12 | .88 | .62 | .18 | 2.0 |
| 31 | 45 | --- | 32 | 60 | --- | 25 | --- | 11 | --- | .49 | .43 | --- |
| TOTAL | 249.02 | 1898.99 | 1414.5 | 1983 | 1662 | 1063 | 1859.2 | 2304.95 | 210.18 | 26.24 | 31.60 | 175.50 |
| MEAN | 8.03 | 63.3 | 45.6 | 64.0 | 57.3 | 34.3 | 62.0 | 74.4 | 7.01 | .85 | 1.02 | 5.85 |
| MAX | 100 | 1000 | 247 | 759 | 479 | 171 | 763 | 1200 | 75 | 12 | 24 | 100 |
| MIN | .14 | .70 | 7.2 | 18 | 19 | 13 | 4.2 | .55 | .88 | .21 | .06 | .07 |
| CFSM | .26 | 2.02 | 1.46 | 2.05 | 1.83 | 1.10 | 1.98 | 2.38 | .22 | .03 | .03 | .19 |
| IN. | .30 | 2.26 | 1.68 | 2.36 | 1.98 | 1.26 | 2.21 | 2.74 | .25 | .03 | .04 | .21 |
| AC-FT | 494 | 3770 | 2810 | 3930 | 3300 | 2110 | 3690 | 4570 | 417 | 52 | 63 | 348 |

CAL YR 1979 TOTAL 35516.48 MEAN 97.3 MAX 5730 MIN .14 CFSM 3.11 IN 42.21 AC-FT 70450
WTR YR 1980 TOTAL 12878.18 MEAN 35.2 MAX 1200 MIN .06 CFSM 1.13 IN 15.31 AC-FT 25540

## 08038000 ATTOYAC BAYOU NEAR CHIRENO, TX

LOCATION.--Lat 31°30'15", long 94°18'15", Nacogdoches-San Augustine County line, Hydrologic Unit 12020005, near right bank on downstream side of pier of bridge on State Highway 21, 2.2 mi (3.5 km) upstream from Amaladeros Creek, 2.8 mi (4.5 km) east of Chireno, 5.4 mi (8.7 km) downstream from Arenoso Creek, and 41 mi (66 km) upstream from mouth.

DRAINAGE AREA.--503 mi$^2$ (1,303 km$^2$).

PERIOD OF RECORD.--January 1924 to September 1925, July 1939 to November 1954, and October 1955 to current year. Monthly discharge only for some periods, published in WSP 1312 and 1732.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 169.58 ft (51.688 m) National Geodetic Vertical Datum of 1929. Jan. 24, 1924, to Aug. 29, 1925, and Sept. 6, 1957, to Oct. 27, 1958, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow is affected at times by discharge from the flood-detention pools of twelve floodwater-retarding structures with a combined detention capacity of 15,870 acre-ft (19.6 hm$^3$). These structures control runoff from 46.7 mi$^2$ (121.0 km$^2$). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--41 years, 449 ft$^3$/s (12.72 m$^3$/s), 12.12 in/yr (308 mm/yr), 325,300 acre-ft/yr (401 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,900 ft$^3$/s (903 m$^3$/s), Nov. 24, 1940, gage height, 25.97 ft (7.916 m); minimum, 0.8 ft$^3$/s (0.023 m$^3$/s) Aug. 26, 27, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1865, 29.9 ft (9.11 m) June 29, 1902, from information by local residents. Flood in July 1933 reached a stage of 25.2 ft (7.68 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft$^3$/s (70.8 m$^3$/s) and maximum (*):

| Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nov. 24 | 1700 | 3,970 | 112 | 17.81 | 5.428 | Apr. 13 | 1400 | *22,900 | 649 | 23.82 | 7.260 |
| Jan. 25 | 2100 | 2,820 | 79.9 | 17.08 | 5.206 | May 18 | 0700 | 9,580 | 271 | 19.91 | 6.069 |

Minimum discharge, 21 ft$^3$/s (0.59 m$^3$/s) Aug. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 139 | 606 | 1220 | 548 | 1410 | 359 | 1930 | 569 | 339 | 78 | 48 | 34 |
| 2 | 129 | 551 | 828 | 481 | 1270 | 383 | 1920 | 483 | 310 | 74 | 42 | 36 |
| 3 | 120 | 457 | 465 | 443 | 1120 | 362 | 1800 | 461 | 283 | 70 | 39 | 37 |
| 4 | 112 | 332 | 357 | 456 | 991 | 353 | 1510 | 484 | 262 | 67 | 36 | 38 |
| 5 | 104 | 220 | 320 | 436 | 882 | 346 | 1170 | 468 | 241 | 64 | 33 | 38 |
| 6 | 97 | 177 | 304 | 411 | 741 | 332 | 767 | 415 | 224 | 62 | 32 | 38 |
| 7 | 94 | 159 | 291 | 394 | 613 | 324 | 557 | 358 | 208 | 60 | 31 | 34 |
| 8 | 92 | 150 | 277 | 371 | 593 | 327 | 489 | 326 | 192 | 57 | 34 | 34 |
| 9 | 90 | 147 | 265 | 348 | 1030 | 322 | 438 | 307 | 181 | 55 | 42 | 35 |
| 10 | 89 | 151 | 253 | 334 | 1330 | 315 | 393 | 289 | 175 | 52 | 41 | 37 |
| 11 | 88 | 150 | 245 | 329 | 1470 | 310 | 362 | 272 | 168 | 51 | 40 | 40 |
| 12 | 87 | 140 | 326 | 330 | 1440 | 301 | 601 | 268 | 158 | 50 | 44 | 49 |
| 13 | 86 | 133 | 677 | 315 | 1790 | 297 | 16700 | 343 | 149 | 49 | 48 | 46 |
| 14 | 84 | 127 | 880 | 305 | 1940 | 296 | 12600 | 484 | 139 | 47 | 48 | 36 |
| 15 | 83 | 123 | 909 | 293 | 1750 | 293 | 7210 | 990 | 131 | 45 | 55 | 32 |
| 16 | 82 | 122 | 925 | 283 | 1540 | 354 | 4050 | 2710 | 124 | 44 | 52 | 30 |
| 17 | 83 | 121 | 946 | 326 | 1370 | 497 | 2730 | 4720 | 118 | 43 | 48 | 28 |
| 18 | 85 | 124 | 955 | 390 | 1200 | 525 | 2240 | 8410 | 112 | 42 | 47 | 26 |
| 19 | 85 | 126 | 900 | 369 | 899 | 487 | 1940 | 4740 | 108 | 41 | 53 | 28 |
| 20 | 86 | 127 | 636 | 362 | 630 | 766 | 1730 | 3140 | 107 | 40 | 54 | 48 |
| 21 | 86 | 173 | 442 | 559 | 537 | 1160 | 1560 | 2680 | 125 | 41 | 50 | 48 |
| 22 | 90 | 618 | 400 | 992 | 496 | 1190 | 1400 | 2400 | 150 | 44 | 39 | 47 |
| 23 | 259 | 1000 | 458 | 1260 | 463 | 1150 | 1290 | 1960 | 155 | 66 | 28 | 46 |
| 24 | 275 | 3080 | 703 | 1480 | 432 | 967 | 1180 | 1660 | 155 | 57 | 25 | 38 |
| 25 | 186 | 3340 | 842 | 2410 | 403 | 811 | 1100 | 1410 | 141 | 53 | 23 | 37 |
| 26 | 145 | 2550 | 825 | 2610 | 374 | 725 | 1050 | 1200 | 124 | 50 | 22 | 34 |
| 27 | 119 | 2120 | 829 | 2210 | 352 | 788 | 939 | 849 | 107 | 45 | 23 | 36 |
| 28 | 107 | 1810 | 858 | 1880 | 341 | 1250 | 765 | 565 | 95 | 49 | 29 | 40 |
| 29 | 104 | 1590 | 886 | 1670 | 333 | 1560 | 691 | 469 | 87 | 80 | 59 | 44 |
| 30 | 115 | 1400 | 874 | 1510 | --- | 1920 | 657 | 415 | 82 | 67 | 55 | 51 |
| 31 | 362 | --- | 709 | 1510 | --- | 2020 | --- | 373 | --- | 59 | 36 | --- |
| TOTAL | 3763 | 21924 | 19805 | 25615 | 27740 | 21090 | 71769 | 44218 | 4950 | 1702 | 1256 | 1145 |
| MEAN | 121 | 731 | 639 | 826 | 957 | 680 | 2392 | 1426 | 165 | 54.9 | 40.5 | 38.2 |
| MAX | 362 | 3340 | 1220 | 2610 | 1940 | 2020 | 16700 | 8410 | 339 | 80 | 59 | 51 |
| MIN | 82 | 121 | 245 | 283 | 333 | 293 | 362 | 268 | 82 | 40 | 22 | 26 |
| CFSM | .24 | 1.45 | 1.27 | 1.64 | 1.90 | 1.35 | 4.76 | 2.84 | .33 | .11 | .08 | .08 |
| IN. | .28 | 1.62 | 1.46 | 1.89 | 2.05 | 1.56 | 5.31 | 3.27 | .37 | .13 | .09 | .08 |
| AC-FT | 7460 | 43490 | 39280 | 50810 | 55020 | 41830 | 142400 | 87710 | 9820 | 3380 | 2490 | 2270 |

CAL YR 1979 TOTAL 353347 MEAN 968 MAX 14100 MIN 65 CFSM 1.92 IN 26.13 AC-FT 700900
WTR YR 1980 TOTAL 244977 MEAN 669 MAX 16700 MIN 22 CFSM 1.33 IN 18.12 AC-FT 485900

## 08039100 AYISH BAYOU NEAR SAN AUGUSTINE, TX

**LOCATION.**--Lat 31°23'46", long 94°09'03", San Augustine County, Hydrologic Unit 12020005, near center of span at downstream side of pier of bridge on State Highway 103, 3.0 mi (4.8 km) upstream from Turkey Creek, and 9.5 mi (15.3 km) south of San Augustine.

**DRAINAGE AREA.**--89.0 $mi^2$ (230.5 $km^2$).

**PERIOD OF RECORD.**--February 1959 to current year.

**REVISED RECORDS.**--WSP 1922: 1959(M).

**GAGE.**--Water-stage recorder. Datum of gage is 190.22 ft (57.979 m) National Geodetic Vertical Datum of 1929. Prior to June 2, 1959, nonrecording gage at same site and datum.

**REMARKS.**--Records good. No known diversion above station. Recording rain gage located at station. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--21 years (water years 1960-80), 83.7 $ft^3/s$ (2.370 $m^3/s$), 12.77 in/yr (324 mm/yr), 60,640 acre-ft/yr (74.8 $hm^3/yr$).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 18,200 $ft^3/s$ (515 $m^3/s$) Sept. 14, 1978, gage height, 18.02 ft (5.492 m); no flow at times.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Between October 1957 and February 1959, the maximum discharge was 15,900 $ft^3/s$ (450 $m^3/s$) Sept. 21 or 22, 1958, gage height, 17.5 ft (5.33 m), from floodmarks.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 4,530 $ft^3/s$ (128 $m^3/s$) May 16 at 1300 hours, gage height, 13.73 ft (4.185 m), no other peak above base of 1,500 $ft^3/s$ (42.5 $m^3/s$); no flow Aug. 31, Sept. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.0 | 39 | 16 | 41 | 193 | 52 | 270 | 46 | 49 | 3.2 | 2.9 | .00 |
| 2 | 4.9 | 26 | 16 | 37 | 115 | 66 | 240 | 52 | 44 | 2.8 | 2.1 | .04 |
| 3 | 4.5 | 13 | 16 | 39 | 93 | 53 | 604 | 53 | 39 | 2.5 | 1.8 | .67 |
| 4 | 3.3 | 8.8 | 16 | 52 | 81 | 47 | 358 | 45 | 35 | 2.3 | 1.6 | .63 |
| 5 | 2.1 | 7.1 | 16 | 44 | 73 | 48 | 160 | 38 | 32 | 2.1 | 1.3 | .64 |
| 6 | 2.5 | 6.0 | 16 | 39 | 79 | 44 | 124 | 33 | 28 | 1.9 | 1.0 | .65 |
| 7 | 2.7 | 5.3 | 17 | 37 | 71 | 42 | 112 | 30 | 25 | 1.8 | .92 | .64 |
| 8 | 2.8 | 7.2 | 15 | 36 | 81 | 44 | 100 | 29 | 22 | 1.7 | .90 | .50 |
| 9 | 2.8 | 6.9 | 14 | 33 | 552 | 43 | 82 | 28 | 20 | 1.6 | .81 | .51 |
| 10 | 2.9 | 6.9 | 14 | 32 | 985 | 40 | 72 | 26 | 19 | 1.5 | .73 | .75 |
| 11 | 2.9 | 7.0 | 14 | 35 | 494 | 38 | 74 | 24 | 18 | 1.3 | .67 | 1.2 |
| 12 | 2.9 | 7.2 | 82 | 44 | 190 | 37 | 259 | 23 | 15 | 1.3 | .62 | 1.3 |
| 13 | 2.9 | 6.8 | 212 | 34 | 140 | 36 | 578 | 49 | 14 | 1.2 | .64 | 1.2 |
| 14 | 2.7 | 5.5 | 94 | 30 | 117 | 31 | 1070 | 80 | 12 | 1.1 | .62 | .95 |
| 15 | 2.6 | 4.4 | 55 | 28 | 106 | 28 | 473 | 232 | 11 | 1.0 | .71 | .69 |
| 16 | 2.8 | 4.2 | 41 | 28 | 100 | 35 | 175 | 2420 | 11 | .91 | .77 | .52 |
| 17 | 2.8 | 4.7 | 34 | 33 | 90 | 65 | 131 | 1680 | 9.5 | .90 | .72 | .42 |
| 18 | 2.8 | 5.4 | 28 | 34 | 80 | 66 | 133 | 833 | 8.8 | .80 | .68 | .31 |
| 19 | 3.0 | 5.8 | 26 | 31 | 76 | 50 | 109 | 621 | 8.2 | .70 | .61 | .25 |
| 20 | 3.2 | 6.1 | 26 | 29 | 73 | 171 | 90 | 749 | 8.0 | .64 | .55 | .15 |
| 21 | 3.4 | 8.6 | 26 | 46 | 69 | 573 | 78 | 648 | 11 | 1.5 | .49 | .06 |
| 22 | 3.6 | 129 | 28 | 237 | 63 | 360 | 69 | 775 | 14 | 4.6 | .39 | .02 |
| 23 | 7.1 | 115 | 45 | 563 | 58 | 123 | 62 | 702 | 18 | 9.0 | .42 | .18 |
| 24 | 15 | 75 | 189 | 307 | 55 | 110 | 57 | 247 | 17 | 4.5 | .36 | .51 |
| 25 | 11 | 42 | 109 | 119 | 51 | 88 | 59 | 148 | 11 | 3.8 | .25 | .54 |
| 26 | 6.4 | 30 | 65 | 113 | 46 | 81 | 143 | 119 | 7.7 | 2.7 | .17 | .55 |
| 27 | 4.9 | 24 | 50 | 106 | 43 | 208 | 91 | 98 | 6.2 | 2.3 | .09 | 1.1 |
| 28 | 4.3 | 18 | 43 | 82 | 44 | 1040 | 65 | 83 | 5.2 | 2.8 | .03 | 1.9 |
| 29 | 4.2 | 15 | 43 | 73 | 44 | 736 | 54 | 72 | 4.5 | 2.4 | .02 | 2.1 |
| 30 | 4.4 | 12 | 53 | 94 | --- | 489 | 47 | 63 | 3.8 | 3.7 | .01 | 1.9 |
| 31 | 30 | --- | 48 | 278 | --- | 698 | --- | 56 | --- | 4.1 | .00 | --- |
| TOTAL | 156.4 | 651.9 | 1467 | 2734 | 4262 | 5542 | 5939 | 10102 | 526.9 | 72.65 | 22.88 | 20.88 |
| MEAN | 5.05 | 21.7 | 47.3 | 88.2 | 147 | 179 | 198 | 326 | 17.6 | 2.34 | .74 | .70 |
| MAX | 30 | 129 | 212 | 563 | 985 | 1040 | 1070 | 2420 | 49 | 9.0 | 2.9 | 2.1 |
| MIN | 2.1 | 4.2 | 14 | 28 | 43 | 28 | 47 | 23 | 3.8 | .64 | .00 | .00 |
| CFSM | .06 | .24 | .53 | .99 | 1.65 | 2.01 | 2.23 | 3.66 | .20 | .03 | .008 | .008 |
| IN. | .07 | .27 | .61 | 1.14 | 1.78 | 2.32 | 2.48 | 4.22 | .22 | .03 | .01 | .01 |
| AC-FT | 310 | 1290 | 2910 | 5420 | 8450 | 10990 | 11780 | 20040 | 1050 | 144 | 45 | 41 |
| (††) | 1.81 | 2.98 | 3.21 | 3.50 | 1.96 | 4.27 | 4.33 | 7.65 | 1.05 | 2.70 | .15 | .50 |

CAL YR 1979 TOTAL 67359.10 MEAN 185 MAX 4910 MIN 1.9 CFSM 2.08 IN 28.15 AC-FT 133600 †† 50.71
WTR YR 1980 TOTAL 31497.61 MEAN 86.1 MAX 2420 MIN .00 CFSM .97 IN 13.17 AC-FT 62480 †† 34.11

†† Rainfall, in inches.

## 08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX

LOCATION.--Lat 31°03'38", long 94°06'21", Jasper County, Hydrologic Unit 12020005, in the powerhouse-intake structure of Sam Rayburn Dam on the Angelina River, 10 mi (16 km) northwest of Jasper, and 25.2 mi (40.5 km) upstream from mouth.

DRAINAGE AREA.--3,449 mi² (8,933 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1965 to current year.

GAGE.--Stevens-type AP recording transmitter. Datum of gage is National Geodetic Vertical Datum of 1929 (level by Corps of Engineers). Prior to Apr. 20, 1965, nonrecording gage at same site and datum. Corps of Engineers gage-height telemeter at station.

REMARKS.--The reservoir is formed by a rolled earthfill dam 19,430 ft (5,920 m) long, including spillway and dikes. The dam was completed and deliberate impoundment began Mar. 29, 1965. The spillway is an uncontrolled broad-crested weir 2,200 ft (670 m) wide, on right bank 7,000 ft (2,100 m) to right of outlet works, and is designed to discharge 125,300 ft³/s (3,550 m³/s) at maximum flood design. The flood-control outlet works consists of two 10.0- by 20.0-foot (3.0 by 6.1 m) rectangular concrete-lined conduits controlled by two 10.0- by 20.0-foot (3.0 by 6.1 m) tractor-type service gates and one 10.0- by 20.0-foot (3.0 by 6.1 m) tractor-type emergency gate. Water for turbines is admitted through four 18.0- by 26.0-foot (5.5 by 7.9 m) penstocks and controlled by two wheeled-leaf-type headgates. The reservoir is operated for flood control and power generation. The area-capacity tables are based on topographic maps prepared by the Corps of Engineers and detailed sedimentation ranges established in 1961 and dated February 1965. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08038000. Corps of Engineers gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam........................................................ | 190.0 | - |
| Design flood...................................................... | 183.0 | 5,610,000 |
| Crest of spillway................................................. | 176.0 | 4,442,400 |
| Top of flood-control pool......................................... | 173.0 | 3,997,600 |
| Top of conservation pool (power pool)............................. | 164.0 | 2,852,600 |
| Top of power head and sediment pool............................... | 149.0 | 1,452,000 |
| Lowest gated outlet (invert)...................................... | 105.0 | 21,940 |

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 3,881,000 acre-ft (4.79 km³) Feb. 7, 1974, elevation, 172.17 ft (52.477 m); minimum since conservation storage was reached in 1968, 1,797,000 acre-ft (2.22 km³) Nov. 15, 1977, elevation, 153.35 ft (46.741 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,353,000 acre-ft (4.13 km³) May 27 at 0800 hours, elevation, 168.19 ft (51.264 m); minimum, 2,171,000 acre-ft (2.68 km³) Sept. 30 at 1430 hours, elevation, 157.49 ft (48.003 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | | | |
|---|---|---|---|---|---|
| 156.0 | 2,032,000 | 162.0 | 2,631,000 | 168.0 | 3,329,000 |
| 158.0 | 2,221,000 | 164.0 | 2,853,000 | 170.0 | 3,586,000 |
| 160.0 | 2,421,000 | 166.0 | 3,085,000 | | |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2304000 | 2295000 | 2413000 | 2530000 | 2727000 | 2882000 | 2985000 | 3025000 | 3260000 | 2801000 | 2540000 | 2318000 |
| 2 | 2301000 | 2295000 | 2417000 | 2530000 | 2737000 | 2846000 | 2998000 | 3013000 | 3235000 | 2795000 | 2536000 | 2312000 |
| 3 | 2300000 | 2294000 | 2414000 | 2542000 | 2746000 | 2824000 | 3018000 | 2997000 | 3212000 | 2782000 | 2532000 | 2303000 |
| 4 | 2300000 | 2292000 | 2414000 | 2542000 | 2753000 | 2820000 | 3014000 | 2980000 | 3184000 | 2776000 | 2529000 | 2288000 |
| 5 | 2300000 | 2295000 | 2415000 | 2542000 | 2756000 | 2814000 | 3012000 | 2979000 | 3157000 | 2769000 | 2518000 | 2279000 |
| 6 | 2304000 | 2299000 | 2416000 | 2542000 | 2756000 | 2807000 | 3005000 | 2964000 | 3131000 | 2758000 | 2512000 | 2277000 |
| 7 | 2297000 | 2295000 | 2414000 | 2550000 | 2749000 | 2804000 | 3001000 | 2963000 | 3107000 | 2752000 | 2505000 | 2277000 |
| 8 | 2293000 | 2295000 | 2408000 | 2554000 | 2789000 | 2800000 | 2987000 | 2963000 | 3087000 | 2745000 | 2494000 | 2274000 |
| 9 | 2298000 | 2303000 | 2407000 | 2552000 | 2838000 | 2792000 | 2967000 | 2947000 | 3059000 | 2735000 | 2483000 | 2269000 |
| 10 | 2288000 | 2302000 | 2401000 | 2556000 | 2851000 | 2788000 | 2945000 | 2941000 | 3038000 | 2727000 | 2483000 | 2262000 |
| 11 | 2284000 | 2299000 | 2405000 | 2560000 | 2863000 | 2788000 | 2941000 | 2935000 | 3016000 | 2718000 | 2475000 | 2254000 |
| 12 | 2284000 | 2304000 | 2465000 | 2556000 | 2870000 | 2785000 | 2966000 | 2926000 | 2994000 | 2710000 | 2463000 | 2249000 |
| 13 | 2286000 | 2300000 | 2478000 | 2557000 | 2876000 | 2785000 | 2987000 | 2933000 | 2974000 | 2701000 | 2450000 | 2246000 |
| 14 | 2282000 | 2299000 | 2478000 | 2555000 | 2883000 | 2785000 | 3014000 | 2940000 | 2956000 | 2693000 | 2440000 | 2248000 |
| 15 | 2282000 | 2299000 | 2483000 | 2559000 | 2907000 | 2777000 | 3032000 | 2995000 | 2945000 | 2682000 | 2430000 | 2239000 |
| 16 | 2279000 | 2299000 | 2490000 | 2565000 | 2905000 | 2777000 | 3036000 | 3067000 | 2937000 | 2670000 | 2427000 | 2231000 |
| 17 | 2280000 | 2297000 | 2468000 | 2568000 | 2886000 | 2789000 | 3036000 | 3114000 | 2925000 | 2666000 | 2427000 | 2224000 |
| 18 | 2279000 | 2298000 | 2462000 | 2568000 | 2902000 | 2776000 | 3036000 | 3157000 | 2914000 | 2660000 | 2417000 | 2221000 |
| 19 | 2269000 | 2300000 | 2461000 | 2574000 | 2902000 | 2782000 | 3034000 | 3224000 | 2902000 | 2644000 | 2407000 | 2219000 |
| 20 | 2266000 | 2295000 | 2465000 | 2589000 | 2902000 | 2809000 | 3034000 | 3255000 | 2911000 | 2635000 | 2399000 | 2219000 |
| 21 | 2261000 | 2334000 | 2468000 | 2598000 | 2905000 | 2802000 | 3035000 | 3284000 | 2898000 | 2633000 | 2390000 | 2215000 |
| 22 | 2281000 | 2349000 | 2473000 | 2631000 | 2902000 | 2801000 | 3034000 | 3311000 | 2892000 | 2627000 | 2383000 | 2209000 |
| 23 | 2273000 | 2357000 | 2498000 | 2634000 | 2902000 | 2812000 | 3031000 | 3323000 | 2881000 | 2619000 | 2379000 | 2202000 |
| 24 | 2273000 | 2373000 | 2507000 | 2647000 | 2907000 | 2816000 | 3024000 | 3336000 | 2873000 | 2606000 | 2378000 | 2196000 |
| 25 | 2273000 | 2378000 | 2508000 | 2662000 | 2896000 | 2816000 | 3066000 | 3346000 | 2863000 | 2597000 | 2367000 | 2192000 |
| 26 | 2268000 | 2387000 | 2509000 | 2675000 | 2880000 | 2822000 | 3089000 | 3347000 | 2854000 | 2587000 | 2361000 | 2184000 |
| 27 | 2270000 | 2408000 | 2512000 | 2682000 | 2874000 | 2864000 | 3077000 | 3343000 | 2841000 | 2577000 | 2355000 | 2181000 |
| 28 | 2270000 | 2420000 | 2516000 | 2690000 | 2871000 | 2887000 | 3062000 | 3334000 | 2830000 | 2577000 | 2347000 | 2182000 |
| 29 | 2266000 | 2414000 | 2522000 | 2698000 | 2871000 | 2934000 | 3048000 | 3319000 | 2824000 | 2567000 | 2338000 | 2182000 |
| 30 | 2283000 | 2410000 | 2527000 | 2718000 | --- | 2957000 | 3038000 | 3304000 | 2807000 | 2558000 | 2329000 | 2180000 |
| 31 | 2295000 | --- | 2527000 | 2725000 | --- | 2971000 | --- | 3288000 | --- | 2548000 | 2326000 | --- |
| MAX | 2304000 | 2420000 | 2527000 | 2725000 | 2907000 | 2971000 | 3089000 | 3347000 | 3260000 | 2801000 | 2540000 | 2318000 |
| MIN | 2261000 | 2292000 | 2401000 | 2530000 | 2727000 | 2776000 | 2941000 | 2926000 | 2807000 | 2548000 | 2326000 | 2180000 |
| (†) | 158.76 | 159.90 | 161.02 | 162.86 | 164.16 | 165.03 | 165.60 | 167.67 | 163.60 | 161.22 | 159.07 | 157.58 |
| (‡) | -1300 | +115000 | +117000 | +198000 | +146000 | +100000 | +67000 | +250000 | -481000 | -259000 | -222000 | -146000 |

CAL YR 1979 MAX 3446000 MIN 2150000
WTR YR 1980 MAX 3347000 MIN 2180000

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

## 08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1964 to current year. Biochemical analyses: November 1967 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|
| JUL 15... | 1530 | 138 | -- | 26.0 | 29 | 15 | 6.0 | 3.3 | 14 |
| SEP 17... | 1530 | 144 | 6.5 | 25.5 | 27 | 7 | 5.7 | 3.2 | 14 |

| DATE | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| JUL 15... | 1.1 | 2.3 | 17 | 0 | 22 | 19 | .1 | 10 | 85 |
| SEP 17... | 1.2 | 3.0 | 24 | 0 | 19 | 20 | .5 | 10 | 87 |

## 08040000 B. A. STEINHAGEN LAKE AT TOWN BLUFF, TX

**LOCATION.**--Lat 30°47'43", long 94°10'48", Tyler County, Hydrologic Unit 12020003, near right bank 70 ft (21 m) upstream from outlet structure of Town Bluff Dam on Neches River, 0.4 mi (0.6 km) north of Town Bluff, and at mile 113.7 (182.9 km).

**DRAINAGE AREA.**--7,573 mi² (19,614 km²).

**PERIOD OF RECORD.**--April 1951 to current year. Prior to October 1967, published as Dam B Reservoir at Town Bluff.

**REVISED RECORDS.**--WSP 1732: Drainage area.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 25, 1956, at site 490 ft (149 m) upstream at same datum. Corps of Engineers gage-height telemeter at station.

**REMARKS.**--The lake is formed by a rolled earthfill dam with concrete spillway sections. The total length of dam is 6,698 ft (2,042 m), including a concrete spillway and nonoverflow section. Deliberate impoundment of water began Apr. 16, 1951, and the dam was completed in June 1951. The uncontrolled spillway is 6,100 ft (1,860 m) long. A 326-foot-long (99 m) gated service spillway with six 40.0- by 35.0-foot (12.2 by 10.7 m) tainter gates is located near right end of dam. The capacity of the spillways at maximum flood design is 218,300 ft³/s (6,180 m³/s). The capacity table is based on a survey made in 1943. Water is used for industrial, municipal, and irrigation supplies. Corps of Engineers gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam (nonoverflow) | 99.0 | - |
| Design flood | 93.0 | 308,600 |
| Crest of uncontrolled spillway (top of tainter gates) | 85.0 | 124,700 |
| Top of conservation pool | 83.0 | 94,200 |
| Bottom of tainter gates (sill) | 50.0 | 0 |

**COOPERATION.**--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 128,400 acre-ft (158 hm³) May 22, 1953, elevation, 85.21 ft (25.972 m); no storage Sept. 18 to Oct. 13, 1954.

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 104,800 acre-ft (129 hm³) Dec. 18 at 1200 hours, elevation, 83.74 ft (25.524 m); minimum, 49,050 acre-ft (60.5 hm³) Oct. 30 at 1330 hours, elevation, 78.89 ft (24.046 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 78.0 | 41,830 | 82.0 | 85,280 |
| 80.0 | 59,320 | 84.0 | 108,700 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 69680 | 64970 | 87450 | 75660 | 79210 | 61890 | 91140 | 77540 | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | 70890 | 68260 | 84640 | 77070 | 74160 | 88360 | 88360 | 78250 | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | 70780 | 70990 | 85020 | 81030 | 68700 | 90740 | 85910 | 78370 | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | 68480 | 73360 | 85270 | 81280 | 65390 | 91000 | 83730 | 76370 | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | 68590 | 75430 | 80910 | 80300 | 68480 | 88160 | 76950 | 71330 | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | 70330 | 77660 | 77660 | 76600 | 74160 | 86800 | 76680 | 83100 | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | 74160 | 78370 | 80910 | 77540 | 75660 | 88760 | 71760 | 67940 | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | 79450 | 79210 | 82880 | 75780 | 78850 | 90200 | 74850 | 73930 | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | 88100 | 81280 | 81770 | 73250 | 88930 | 87580 | 76130 | 72450 | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | 86930 | 80420 | 85140 | 73130 | 85910 | 82760 | 75780 | 67080 | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | 86160 | 79690 | 82760 | 73360 | 83880 | 74500 | 80420 | 68590 | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | 85400 | 79210 | 85910 | 73250 | 84760 | 72680 | 81130 | 74730 | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | 84640 | 78250 | 89680 | 71330 | 85760 | 74040 | 81280 | 81830 | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | 83130 | 77070 | 90740 | 70330 | 87190 | 71000 | 83360 | 84360 | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | 81890 | 76010 | 92480 | 67510 | 87970 | 72000 | 76950 | 92080 | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | 82260 | 75080 | 94940 | 67510 | 83880 | 70440 | 74620 | 90420 | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | 81030 | 73930 | 99850 | 69130 | 80300 | 80300 | 76250 | 92680 | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | 79450 | 72790 | 101700 | 69890 | 74620 | 86040 | 79570 | 83130 | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | 78020 | 70330 | 89680 | 71220 | 69890 | 88090 | 82510 | 82760 | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | 80660 | 66980 | 77660 | 72450 | 69370 | 92890 | 83500 | 81830 | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | 78020 | 68800 | 70670 | 76480 | 73250 | 92080 | 83860 | 83750 | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | 78130 | 78850 | 69130 | 87580 | 77420 | 93570 | 84260 | 83520 | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | 74500 | 86040 | 69350 | 90740 | 82010 | 92890 | 84360 | 84640 | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | 71330 | 88360 | 73820 | 90740 | 85910 | 89610 | 84640 | 82080 | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | 68050 | 85520 | 77900 | 88040 | 87840 | 84890 | 92210 | 83750 | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | 64450 | 83880 | 82880 | 80420 | 89020 | 82280 | 82510 | 83000 | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | 61500 | 84260 | 86680 | 79690 | 86530 | 90990 | 71690 | 81400 | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | 58070 | 83880 | 87320 | 83500 | 77900 | 96430 | 73700 | 79090 | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | 54580 | 85400 | 82880 | 83520 | 73660 | 97860 | 73200 | 78490 | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | 55510 | 87450 | 77900 | 86230 | --- | 96180 | 76400 | 76130 | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | 60900 | --- | 77300 | 85140 | --- | 93570 | --- | 71220 | --- | [illegible] | [illegible] | --- |
| MAX | 88100 | 88360 | 101700 | 90740 | 89020 | 96430 | 92210 | 90420 | [illegible] | [illegible] | [illegible] | [illegible] |
| MIN | 54580 | 64970 | 69130 | 67510 | 65390 | 71000 | 71700 | 67100 | [illegible] | [illegible] | [illegible] | [illegible] |
| (†) | 80.16 | 82.49 | 81.67 | 82.31 | 81.53 | 82.95 | 81.60 | 81.14 | [illegible] | [illegible] | [illegible] | [illegible] |
| (‡) | -6180 | +26550 | -10150 | +7840 | -9480 | +17910 | -17090 | -5200 | [illegible] | [illegible] | [illegible] | [illegible] |

CAL YR 1979 MAX 101700 MIN 47520 ‡ +17290
WTR YR 1980 MAX 101700 MIN 54580 ‡ +14200

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

## 08040500 NECHES RIVER AT TOWN BLUFF, TX

**LOCATION.**--Lat 30°47'36", long 94°10'28", Jasper-Tyler County line, Hydrologic Unit 12020003, on left bank 0.3 mi (0.5 km) downstream from Town Bluff Dam, 0.5 mi (0.8 km) northeast of Town Bluff, 2.5 mi (4.0 km) upstream from Walnut Run, 8 mi (13 km) downstream from Wolf Creek, and at mile 113.4 (182.5 km).

**DRAINAGE AREA.**--7,573 mi$^2$ (19,614 km$^2$).

**PERIOD OF RECORD.**--March 1951 to current year.

**REVISED RECORDS.**--WSP 1732: Drainage area.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 21, 1953, water-stage recorder, and May 21, 1953, to Dec. 3, 1954, nonrecording gage at present site and datum.

**REMARKS.**--Records fair. Flow regulated by B. A. Steinhagen Lake (station 08040000) 0.3 mi (0.5 km) upstream and by Sam Rayburn Reservoir (station 08039300) 37.9 mi (61.0 km) upstream. Some diversions above station. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--13 years (water years 1952-64) prior to regulation by Sam Rayburn Reservoir, 4,406 ft$^3$/s (124.8 m$^3$/s), 3,192,000 acre-ft/yr (3.94 km$^3$/yr); 16 years (water years 1965-80) regulated, 4,786 ft$^3$/s (135.5 m$^3$/s), 3,467,000 acre-ft/yr (4.27 km$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 90,900 ft$^3$/s (2,570 m$^3$/s) May 21, 22, 1953, elevation, 82.85 ft (25.253 m); no flow at times due to regulation of B. A. Steinhagen Lake.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood of May 1884 reached a stage about 86.8 ft (26.46 m), discharge about 120,000 ft$^3$/s (3,400 m$^3$/s), and is the highest since that date, from information by Corps of Engineers.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 17,600 ft$^3$/s (498 m$^3$/s) May 26 at 0600 hours, elevation, 67.77 ft (20.656 m); minimum daily, 1,100 ft$^3$/s (31.2 m$^3$/s) Nov. 8, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6040 | 1370 | 5580 | 5640 | 12900 | 7900 | 13000 | 13100 | 16400 | 4180 | 3220 | 2790 |
| 2 | 6020 | 1180 | 5610 | 5610 | 12800 | 8660 | 12900 | 13200 | 14600 | 3620 | 3210 | 2800 |
| 3 | 5980 | 1140 | 5600 | 5620 | 12000 | 11100 | 12800 | 13200 | 14500 | 3600 | 3190 | 2750 |
| 4 | 5370 | 1130 | 5610 | 5950 | 10200 | 13200 | 13400 | 13200 | 14600 | 3590 | 3170 | 2670 |
| 5 | 3020 | 1130 | 5610 | 6350 | 7660 | 12400 | 14200 | 13100 | 14600 | 3590 | 3160 | 2680 |
| 6 | 1870 | 1120 | 4590 | 6350 | 6520 | 9330 | 13100 | 11600 | 14700 | 3710 | 3110 | 2710 |
| 7 | 1800 | 1110 | 3090 | 6350 | 7200 | 6870 | 12300 | 7670 | 14700 | 4110 | 3020 | 2690 |
| 8 | 1780 | 1100 | 3030 | 6340 | 8150 | 7580 | 12200 | 5350 | 14700 | 4120 | 3030 | 2400 |
| 9 | 1770 | 1100 | 3020 | 6320 | 9800 | 9430 | 12200 | 7010 | 14700 | 4120 | 3040 | 1830 |
| 10 | 1770 | 1230 | 3020 | 5710 | 12100 | 9690 | 12200 | 8030 | 14200 | 4110 | 3040 | 1800 |
| 11 | 1770 | 1380 | 3030 | 4990 | 12900 | 8840 | 11100 | 5950 | 12300 | 4100 | 3020 | 1800 |
| 12 | 1770 | 1380 | 3030 | 4980 | 12800 | 7400 | 9320 | 4520 | 9920 | 4090 | 3020 | 1790 |
| 13 | 1760 | 1360 | 4330 | 4960 | 12400 | 4990 | 9680 | 4480 | 9790 | 4090 | 3030 | 1790 |
| 14 | 1760 | 1350 | 6760 | 4950 | 11900 | 5170 | 10400 | 5270 | 8380 | 4070 | 3040 | 1780 |
| 15 | 1760 | 1350 | 7760 | 4930 | 12200 | 4010 | 12700 | 6820 | 6090 | 4060 | 3060 | 1770 |
| 16 | 1760 | 1350 | 7800 | 3840 | 13000 | 2460 | 14400 | 10600 | 6400 | 4070 | 3050 | 1770 |
| 17 | 2000 | 1350 | 9050 | 2000 | 13400 | 2450 | 13400 | 15600 | 6680 | 4070 | 3030 | 1770 |
| 18 | 2350 | 1350 | 12600 | 1930 | 13300 | 2470 | 12100 | 15400 | 6670 | 4080 | 3010 | 2000 |
| 19 | 2350 | 1840 | 14800 | 1920 | 13200 | 3470 | 12000 | 15100 | 7170 | 4090 | 3020 | 2470 |
| 20 | 2350 | 2370 | 13900 | 1920 | 12000 | 4840 | 12500 | 15000 | 7430 | 4080 | 3020 | 2460 |
| 21 | 2350 | 2400 | 10500 | 1920 | 9450 | 5020 | 13000 | 15000 | 7400 | 3940 | 3020 | 2440 |
| 22 | 2370 | 2940 | 6730 | 4190 | 8620 | 4890 | 13100 | 16000 | 6870 | 3730 | 3030 | 2420 |
| 23 | 2380 | 2950 | 4710 | 7770 | 8620 | 5770 | 13100 | 17400 | 5670 | 3720 | 3030 | 2410 |
| 24 | 2380 | 3800 | 3300 | 8430 | 8660 | 7610 | 13100 | 17500 | 4750 | 3720 | 3010 | 2420 |
| 25 | 2380 | 5640 | 3240 | 8940 | 9410 | 8580 | 13600 | 17600 | 4720 | 3590 | 2990 | 2420 |
| 26 | 2370 | 4990 | 3880 | 9780 | 10100 | 7890 | 15000 | 17600 | 4720 | 3430 | 3000 | 2420 |
| 27 | 2340 | 4120 | 4610 | 9740 | 10800 | 6680 | 14600 | 17600 | 4720 | 3430 | 3000 | 2420 |
| 28 | 2280 | 4060 | 5700 | 9730 | 11300 | 10100 | 14000 | 17500 | 4730 | 3460 | 3000 | 2410 |
| 29 | 2260 | 4070 | 7280 | 10400 | 10100 | 12600 | 13200 | 17400 | 4720 | 3460 | 2900 | 2400 |
| 30 | 2280 | 4660 | 7310 | 11900 | --- | 13900 | 13100 | 17400 | 4720 | 3450 | 2770 | 2410 |
| 31 | 2340 | --- | 6630 | 12600 | --- | 13300 | --- | 17300 | --- | 3350 | 2810 | --- |
| TOTAL | 80780 | 66320 | 191710 | 192060 | 313490 | 238600 | 381700 | 392500 | 281550 | 118830 | 94050 | 68690 |
| MEAN | 2606 | 2211 | 6184 | 6195 | 10810 | 7697 | 12720 | 12660 | 9385 | 3833 | 3034 | 2290 |
| MAX | 6040 | 5640 | 14800 | 12600 | 13400 | 13900 | 15000 | 17600 | 16400 | 4180 | 3220 | 2800 |
| MIN | 1760 | 1100 | 3020 | 1920 | 6520 | 2450 | 9320 | 4480 | 4720 | 3350 | 2770 | 1770 |
| AC-FT | 160200 | 131500 | 380300 | 381000 | 621800 | 473300 | 757100 | 778500 | 558500 | 235700 | 186500 | 136200 |

CAL YR 1979 TOTAL 3489140 MEAN 9559 MAX 20100 MIN 1070 AC-FT 6921000
WTR YR 1980 TOTAL 2420280 MEAN 6613 MAX 17600 MIN 1100 AC-FT 4801000

## 08041000 NECHES RIVER AT EVADALE, TX
(National stream-quality accounting network)

LOCATION.--Lat 30°21'22", long 94°05'36", Jasper-Hardin County line, Hydrologic Unit 12020003, near center of channel on downstream side of pier of bridge on U.S. Highway 96 at Evadale, 0.8 mi (1.3 km) upstream from Mill Creek, 16 mi (26 km) upstream from Village Creek, and at mile 55.6 (89.5 km).

DRAINAGE AREA.--7,951 mi² (20,593 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1904 to December 1906, April 1921 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 718: 1929. WSP 1342: 1905-7, 1924. WSP 1732: Drainage area at former site.

GAGE.--Water-stage recorder. Datum of gage is 8.25 ft (2.515 m) National Geodetic Vertical Datum of 1929. July 1, 1904, to Dec. 31, 1906, nonrecording gage on Gulf, Colorado, and Santa Fe Railway Co. bridge at site 1.2 mi (1.9 km) downstream at datum 5.50 ft (1.676 m) lower; Apr. 1, 1921, to Dec. 7, 1948, nonrecording gages at site 1.2 mi (1.9 km) downstream at present datum; Dec. 8, 1948, to Nov. 8, 1963, water-stage recorder at site 1.2 mi (1.9 km) downstream at present datum.

REMARKS.--Water-discharge records fair. Flow regulated by B. A. Steinhagen Lake (station 08040000) 58.1 mi (93.5 km) upstream, capacity 124,700 acre-ft (154 hm³), and Sam Rayburn Reservoir (station 08039300), 95.7 mi (154.0 km) upstream, capacity 4,442,000 acre-ft (5.48 km³). Some diversions upstream from municipal use. Gage-height telemeter at station.

AVERAGE DISCHARGE.--45 years (water years 1905-6, 1922-64) unregulated, 6,308 ft³/s (178.6 m³/s), 4,570,000 acre-ft/yr (5.63 km³/yr); 16 years (water years 1965-80) regulated, 5,379 ft³/s (152.3 m³/s), 3,897,000 acre-ft/yr (4.81 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,100 ft³/s (2,610 m³/s) May 11, 1944, gage height, 23.58 ft (7.187 m), from floodmark, at site then in use; minimum daily, 63 ft³/s (1.78 m³/s) Nov. 26-28, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1884 reached a stage of 26.2 ft (7.99 m) at former site with a discharge of about 125,000 ft³/s (3,540 m³/s), and flood in August 1915 reached a stage of 24.5 ft (7.47 m) at former site with a discharge of about 102,000 ft³/s (2,890 m³/s). These are the highest floods since at least 1884. Stages furnished by Gulf, Colorado, and Santa Fe Railway Co.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,900 ft³/s (507 m³/s) May 27, 29, 30, gage height, 16.40 ft (4.999 m); minimum daily, 1,140 ft³/s (32.3 m³/s) Nov. 9, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10200 | 4170 | 4610 | 7510 | 11500 | 11600 | 16000 | 14300 | 17700 | 4970 | 3530 | 2960 |
| 2 | 8430 | 3540 | 5320 | 6990 | 12200 | 11000 | 15800 | 13900 | 17600 | 4860 | 3360 | 2930 |
| 3 | 7210 | 2370 | 5730 | 6460 | 13000 | 9860 | 15000 | 13600 | 17100 | 4350 | 3310 | 2920 |
| 4 | 6710 | 1640 | 5860 | 6250 | 13400 | 9920 | 14100 | 13500 | 15900 | 4020 | 3300 | 2930 |
| 5 | 6270 | 1390 | 5960 | 6220 | 13000 | 11200 | 13700 | 13400 | 14900 | 3880 | 3280 | 2920 |
| 6 | 5180 | 1290 | 5730 | 6500 | 11800 | 12600 | 13800 | 13400 | 14500 | 3850 | 3270 | 2960 |
| 7 | 3370 | 1240 | 5120 | 6690 | 9190 | 12900 | 14200 | 13200 | 14400 | 3870 | 3250 | 2960 |
| 8 | 2490 | 1180 | 4410 | 6770 | 8190 | 11000 | 14000 | 12100 | 14400 | 4050 | 3190 | 2920 |
| 9 | 2280 | 1140 | 3840 | 6770 | 8940 | 9000 | 13300 | 9110 | 14500 | 4220 | 3150 | 2780 |
| 10 | 2210 | 1140 | 3520 | 6790 | 9920 | 8850 | 12800 | 7370 | 14500 | 4260 | 3130 | 2280 |
| 11 | 2190 | 1210 | 3430 | 6730 | 11600 | 9630 | 12700 | 7830 | 14500 | 4220 | 3140 | 2000 |
| 12 | 2190 | 1430 | 3760 | 6130 | 13000 | 10000 | 13700 | 7890 | 14200 | 4140 | 3140 | 1940 |
| 13 | 2160 | 1430 | 4480 | 5760 | 13900 | 9570 | 14300 | 6500 | 12900 | 4160 | 3150 | 1920 |
| 14 | 2150 | 1380 | 5130 | 5600 | 14000 | 7890 | 12700 | 5860 | 11500 | 4170 | 3150 | 1910 |
| 15 | 2140 | 1350 | 5940 | 5500 | 13900 | 6560 | 11800 | 6030 | 10500 | 4160 | 3150 | 1880 |
| 16 | 2150 | 1330 | 6760 | 5430 | 13500 | 5780 | 11700 | 8210 | 8870 | 4120 | 3170 | 1870 |
| 17 | 2090 | 1320 | 7770 | 5050 | 13300 | 4670 | 12600 | 12000 | 7530 | 4120 | 3170 | 1850 |
| 18 | 2130 | 1310 | 8460 | 3580 | 13500 | 4020 | 14000 | 14800 | 7220 | 4200 | 3180 | 1850 |
| 19 | 2540 | 1310 | 9240 | 2610 | 14000 | 3790 | 14400 | 17300 | 7210 | 4220 | 3160 | 1990 |
| 20 | 2700 | 1450 | 11200 | 2760 | 14500 | 3940 | 13400 | 17500 | 7250 | 4240 | 3140 | 2510 |
| 21 | 2730 | 2120 | 13600 | 2980 | 14400 | 5110 | 12900 | 16800 | 7560 | 4330 | 3140 | 2680 |
| 22 | 2830 | 2600 | 14800 | 4360 | 13500 | 5970 | 12700 | 16600 | 7690 | 4220 | 3160 | 2680 |
| 23 | 2880 | 3260 | 13100 | 6390 | 11500 | 6150 | 13100 | 15900 | 7670 | 4020 | 3160 | 2640 |
| 24 | 2870 | 3760 | 9660 | 8170 | 10100 | 6200 | 13500 | 16100 | 7040 | 3850 | 3160 | 2630 |
| 25 | 2840 | 4030 | 6490 | 9530 | 9360 | 6910 | 13700 | 16900 | 5980 | 3740 | 3130 | 2640 |
| 26 | 2780 | 5220 | 4970 | 10000 | 9440 | 8080 | 14000 | 17500 | 5300 | 3670 | 3140 | 2670 |
| 27 | 2740 | 6100 | 4540 | 10200 | 9830 | 9360 | 14400 | 17800 | 5060 | 3550 | 3130 | 2660 |
| 28 | 2710 | 5500 | 4920 | 10500 | 10400 | 10200 | 14900 | 17800 | 5030 | 3510 | 3130 | 2640 |
| 29 | 2710 | 4930 | 5480 | 10600 | 11000 | 11100 | 15100 | 17800 | 4990 | 3500 | 3090 | 2610 |
| 30 | 2720 | 4620 | 6540 | 10600 | --- | 13200 | 14800 | 17800 | 4990 | 3480 | 3040 | 2640 |
| 31 | 3720 | --- | 7340 | 10900 | --- | 15000 | --- | 17800 | --- | 3510 | 2990 | --- |
| TOTAL | 108320 | 74760 | 207710 | 210330 | 345870 | 271060 | 413100 | 416600 | 318490 | 125460 | 98590 | 74770 |
| MEAN | 3494 | 2492 | 6700 | 6785 | 11930 | 8744 | 13770 | 13440 | 10620 | 4047 | 3180 | 2492 |
| MAX | 10200 | 6100 | 14800 | 10900 | 14500 | 15000 | 16000 | 17800 | 17700 | 4970 | 3530 | 2960 |
| MIN | 2090 | 1140 | 3430 | 2610 | 8190 | 3790 | 11700 | 5860 | 4990 | 3480 | 2990 | 1850 |
| AC-FT | 214900 | 148300 | 412000 | 417200 | 686000 | 537600 | 819400 | 826300 | 631700 | 248800 | 195600 | 148300 |

CAL YR 1979 TOTAL 4007370 MEAN 10980 MAX 27200 MIN 1060 AC-FT 7949000
WTR YR 1980 TOTAL 2665060 MEAN 7282 MAX 17800 MIN 1140 AC-FT 5286000

## 08041000 NECHES RIVER AT EVADALE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1947 to current year. Pesticide analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1947 to current year.
WATER TEMPERATURES: October 1947 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 422 micromhos Jan. 25, 1957; minimum daily, 23 micromhos Sept. 19, 1963.
WATER TEMPERATURES: Maximum daily, 34.0°C June 29, 1953; minimum daily, 3.0°C Jan. 30, 31, 1948, Jan. 31, 1949, and Jan. 24, 1963.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 183 micromhos Mar. 26; minimum daily, 78 micromhos May 26.
WATER TEMPERATURES: Maximum daily, 33.0°C July 16; minimum daily, 7.0°C Feb. 2.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | 1045 | 2880 | 147 | 7.4 | 23.0 | 45 | 19 | 8.1 | 92 | 1.6 | 210 | 56 |
| NOV 14... | 1330 | 1380 | 160 | 7.2 | 14.5 | 80 | 32 | 10.3 | 98 | 1.0 | 40 | 24 |
| JAN 15... | 1405 | 5500 | 174 | 6.8 | 12.0 | 55 | 23 | 12.2 | 112 | 1.2 | 28 | 30 |
| FEB 26... | 1045 | 9370 | 149 | 7.5 | 12.5 | 50 | 24 | 10.9 | 100 | 1.7 | 32 | 30 |
| MAR 24... | 1615 | 6200 | 168 | 7.0 | 16.0 | 60 | 26 | 10.5 | 105 | 1.5 | 62 | 60 |
| APR 29... | 1330 | 15200 | 132 | 6.8 | 19.0 | -- | -- | 8.2 | 87 | 1.5 | 310 | 150 |
| MAY 28... | 1415 | 17800 | 88 | 6.6 | 25.5 | 160 | 48 | 6.2 | 75 | 1.0 | 150 | 92 |
| JUN 24... | 1605 | 6940 | 148 | 6.8 | 28.0 | 60 | 29 | 6.9 | 86 | .4 | 54 | 30 |
| JUL 29... | 1615 | 3500 | 142 | 6.9 | 30.0 | 35 | 26 | 7.9 | 103 | .2 | 24 | 32 |
| AUG 26... | 1715 | 3150 | 148 | 6.9 | 30.0 | 40 | 18 | 7.7 | 100 | 1.0 | 40 | 24 |
| SEP 15... | 1555 | 1880 | 154 | 7.3 | 29.0 | 25 | 11 | 8.3 | 108 | .6 | 64 | 88 |

| DATE | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | 29 | 6 | 7.1 | 2.8 | 14 | 1.1 | 2.9 | 28 | 0 | 17 | 17 |
| NOV 14... | 32 | 11 | 8.3 | 2.7 | 17 | 1.3 | 3.2 | -- | 0 | 18 | 22 |
| JAN 15... | 33 | 16 | 8.1 | 3.2 | 17 | 1.3 | 2.9 | 21 | 0 | 27 | 21 |
| FEB 26... | 29 | 16 | 7.0 | 2.9 | 16 | 1.3 | 2.4 | 16 | 0 | 23 | 19 |
| MAR 24... | 31 | 15 | 7.5 | 3.0 | 17 | 1.3 | 2.5 | 20 | 0 | 23 | 21 |
| APR 29... | -- | -- | -- | -- | -- | -- | -- | 17 | 0 | -- | -- |
| MAY 28... | 21 | 0 | 5.4 | 1.8 | 8.4 | .8 | 2.3 | 15 | 0 | 14 | 9.2 |
| JUN 24... | 31 | 15 | 6.9 | 3.3 | 15 | 1.2 | 2.5 | 19 | 0 | 21 | 24 |
| JUL 29... | 30 | 14 | 6.7 | 3.3 | 14 | 1.1 | 2.6 | 19 | 0 | 23 | 18 |
| AUG 26... | 29 | 12 | 6.5 | 3.2 | 14 | 1.1 | 2.4 | 21 | 0 | 21 | 19 |
| SEP 15... | 30 | 15 | 6.6 | 3.3 | 13 | 1.0 | 2.6 | 23 | 0 | 21 | 19 |

## 08041000 NECHES RIVER AT EVADALE, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) | SOLIDS, VOLA-TILE, SUS-PENDED (MG/L) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | .1 | 13 | 109 | 88 | 27 | 13 | .11 | .16 | .060 | .030 | .56 |
| NOV 14... | .1 | 13 | 110 | 97 | 50 | 28 | .05 | .08 | .060 | .030 | 1.0 |
| JAN 15... | .1 | 14 | 122 | 104 | 89 | 21 | .07 | .04 | .060 | .000 | .45 |
| FEB 26... | .1 | 11 | 96 | 89 | 33 | 30 | .02 | .02 | .000 | .010 | .66 |
| MAR 24... | .1 | 11 | 111 | 95 | 48 | 10 | .02 | .03 | .000 | .010 | .81 |
| APR 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 28... | .1 | 9.1 | 79 | 63 | 18 | 4 | .09 | .10 | .040 | .070 | .72 |
| JUN 24... | .1 | 11 | 113 | 91 | 22 | 0 | .09 | .04 | .040 | .010 | .82 |
| JUL 29... | .2 | 12 | 95 | 89 | 41 | 27 | .00 | .00 | .020 | .000 | .77 |
| AUG 26... | .1 | 11 | 105 | 87 | 13 | 0 | .22 | .00 | .460 | .000 | .84 |
| SEP 15... | .1 | 11 | 84 | 86 | 21 | 0 | .00 | .00 | .000 | .000 | .69 |

| DATE | NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | PHOS-PHORUS, DIS-SOLVED (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | CARBON, ORGANIC DIS-SOLVED (MG/L AS C) | CARBON, ORGANIC SUS-PENDED (MG/L AS C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | .60 | .62 | .63 | .050 | .090 | 8.5 | -- | -- | 57 | 443 | 60 |
| NOV 14... | .71 | 1.1 | .74 | .070 | .010 | 11 | -- | -- | 61 | 227 | 49 |
| JAN 15... | .36 | .51 | .36 | .040 | .030 | -- | 7.1 | 1.9 | 36 | 535 | 66 |
| FEB 26... | .56 | .66 | .57 | .040 | .010 | 8.2 | -- | -- | 40 | 1010 | 62 |
| MAR 24... | .52 | .81 | .53 | .070 | .020 | -- | 8.4 | .8 | 53 | 887 | 67 |
| APR 29... | -- | -- | -- | -- | -- | -- | -- | -- | 43 | 1770 | 86 |
| MAY 28... | .45 | .76 | .52 | .200 | .020 | 18 | -- | -- | 38 | 1830 | 92 |
| JUN 24... | .49 | .86 | .50 | .010 | .000 | -- | 6.2 | .8 | 47 | 881 | 82 |
| JUL 29... | .38 | .79 | .38 | .050 | .020 | 7.3 | -- | -- | 81 | 765 | 56 |
| AUG 26... | .39 | 1.3 | .39 | .050 | .030 | 6.8 | -- | -- | 70 | 595 | 55 |
| SEP 15... | .41 | .69 | .41 | .030 | .060 | -- | 5.3 | 1.8 | 96 | 487 | 50 |

| DATE | TIME | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUS-PENDED TOTAL (UG/L AS AS) | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) | BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) | CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 14... | 1330 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 15... | 1405 | 1 | 1 | 0 | 0 | 0 | 50 | 1 | 0 | 18 | 10 |
| FEB 26... | 1045 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 24... | 1615 | 1 | 1 | 0 | 100 | 50 | 50 | 2 | 0 | 2 | 20 |
| MAY 28... | 1415 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 24... | 1605 | 3 | 2 | 1 | 0 | 0 | 50 | 2 | 0 | 6 | 0 |
| AUG 26... | 1715 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 15... | 1555 | 2 | 1 | 1 | 0 | 0 | 40 | 1 | -- | <1 | 0 |

## 08041000 NECHES RIVER AT EVADALE, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) | CHROMIUM, DISSOLVED (UG/L AS CR) | COBALT, TOTAL RECOVERABLE (UG/L AS CO) | COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) | COBALT, DISSOLVED (UG/L AS CO) | COPPER, TOTAL RECOVERABLE (UG/L AS CU) | COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) | COPPER, DISSOLVED (UG/L AS CU) | IRON, TOTAL RECOVERABLE (UG/L AS FE) | IRON, SUSPENDED RECOVERABLE (UG/L AS FE) | IRON, DISSOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 14... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 15... | 10 | 0 | 0 | 0 | <3 | 1 | 0 | 1 | 1500 | 1300 | 160 |
| FEB 26... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 24... | 20 | 0 | 2 | 0 | <3 | 6 | 5 | 1 | 1600 | 1400 | 160 |
| MAY 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 24... | 0 | 0 | 0 | -- | <3 | 7 | 5 | 2 | 1600 | 1400 | 190 |
| AUG 26... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 15... | 0 | 0 | 1 | -- | <3 | 2 | 1 | 1 | 790 | 760 | 30 |

| DATE | LEAD, TOTAL RECOVERABLE (UG/L AS PB) | LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) | MANGANESE, SUSPENDED RECOV. (UG/L AS MN) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY TOTAL RECOVERABLE (UG/L AS HG) | MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) | MERCURY DISSOLVED (UG/L AS HG) | NICKEL, TOTAL RECOVERABLE (UG/L AS NI) | NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 14... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 15... | 23 | 0 | 28 | 100 | 70 | 30 | .1 | .1 | .0 | 6 | 3 |
| FEB 26... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 24... | 19 | 0 | 19 | 130 | 100 | 30 | .1 | .1 | .0 | 11 | 8 |
| MAY 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 24... | 32 | 10 | 22 | 200 | 150 | 50 | .2 | .1 | .1 | 4 | 0 |
| AUG 26... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 15... | 42 | 0 | 43 | 250 | 250 | 3 | .4 | .4 | .0 | 3 | 1 |

| DATE | NICKEL, DISSOLVED (UG/L AS NI) | SELENIUM, TOTAL (UG/L AS SE) | SELENIUM, SUSPENDED TOTAL (UG/L AS SE) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, TOTAL RECOVERABLE (UG/L AS AG) | SILVER, SUSPENDED RECOVERABLE (UG/L AS AG) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, TOTAL RECOVERABLE (UG/L AS ZN) | ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|---|---|---|
| NOV 14... | -- | -- | -- | -- | 1 | -- | -- | -- | -- | -- |
| JAN 15... | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 30 | 7 |
| FEB 26... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| MAR 24... | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 20 | <3 |
| MAY 28... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| JUN 24... | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 70 | 5 |
| AUG 26... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| SEP 15... | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 20 | 4 |

## WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | PCB TOTAL (UG/L) | PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) | NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | CHLORDANE, TOTAL (UG/L) | CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| FEB 26... | 1045 | .00 | 0 | .00 | .00 | .0 | .0 | 0 | .00 | .0 |
| JUL 29... | 1615 | .00 | 0 | .00 | .00 | .0 | .0 | 0 | .00 | .0 |

| DATE | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) | DIAZINON, TOTAL (UG/L) | DIELDRIN TOTAL (UG/L) | DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | ENDOSULFAN, TOTAL (UG/L) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| FEB 26... | .00 | .0 | .00 | .0 | .00 | .00 | .0 | .00 | .00 | .0 |
| JUL 29... | .00 | .0 | .00 | .0 | .00 | .00 | .0 | .00 | .00 | .0 |

| DATE | ETHION, TOTAL (UG/L) | HEPTACHLOR, TOTAL (UG/L) | HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) | HEPTACHLOR EPOXIDE TOTAL (UG/L) | HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) | MALATHION, TOTAL (UG/L) | METHOXYCHLOR, TOTAL (UG/L) | METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| FEB 26... | .00 | .00 | .0 | .00 | .0 | .00 | .0 | .00 | .00 | .0 |
| JUL 29... | .00 | .00 | .0 | .00 | .0 | .00 | .0 | .00 | .00 | .0 |

| DATE | METHYL PARATHION, TOTAL (UG/L) | METHYL TRITHION, TOTAL (UG/L) | MIREX, TOTAL (UG/L) | PARATHION, TOTAL (UG/L) | TOXAPHENE, TOTAL (UG/L) | TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) | TOTAL TRITHION (UG/L) | 2,4-D, TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) | SILVEX, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| FEB 26... | .00 | .00 | .00 | .00 | 0 | 0 | .00 | .00 | .00 | .00 |
| JUL 29... | .00 | .00 | .00 | .00 | 0 | 0 | .00 | .01 | .00 | .00 |

08041000 NECHES RIVER AT EVADALE, TX--Continued

## PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| | | | | |
|---|---|---|---|---|
| DATE | NOV 14,79 | MAR 24,80 | MAY 28,80 | JUN 24,80 |
| TIME | 1330 | 1615 | 1415 | 1605 |
| TOTAL CELLS/ML | 4100 | 1200 | 2300 | 1200 |
| DIVERSITY: DIVISION | 1.5 | 1.5 | 1.4 | 1.5 |
| .CLASS | 1.5 | 1.5 | 1.4 | 1.6 |
| ..ORDER | 2.0 | 2.1 | 2.0 | 2.1 |
| ...FAMILY | 2.3 | 2.4 | 2.9 | 2.4 |
| ....GENUS | 2.8 | 3.1 | 3.8 | 3.1 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | | | |
| .CHLOROPHYCEAE | | | | | | | | |
| ..CHLOROCOCCALES | | | | | | | | |
| ...CHARACIACEAE | | | | | | | | |
| ....SCHROEDERIA | 24 | 1 | -- | - | -- | - | -- | - |
| ...COELASTRACEAE | | | | | | | | |
| ....COELASTRUM | -- | - | -- | - | 110 | 5 | 64 | 6 |
| ...HYDRODICTYACEAE | | | | | | | | |
| ....PEDIASTRUM | -- | - | -- | - | -- | - | -- | - |
| ...OOCYSTACEAE | | | | | | | | |
| ....ANKISTRODESMUS | 250 | 6 | 39 | 3 | 110 | 5 | 26 | 2 |
| ....CHLORELLA | 240 | 6 | -- | - | -- | - | -- | - |
| ....CHODATELLA | -- | - | -- | - | -- | - | -- | - |
| ....DICTYOSPHAERIUM | -- | - | -- | - | 400# | 17 | 350# | 30 |
| ....KIRCHNERIELLA | 180 | 4 | -- | - | 110 | 5 | -- | - |
| ....OOCYSTIS | -- | - | -- | - | -- | - | -- | - |
| ....TETRAEDRON | -- | - | 13 | 1 | -- | - | -- | - |
| ....TREUBARIA | -- | - | -- | - | 14 | 1 | -- | - |
| ....WESTELLA | -- | - | -- | - | -- | - | 210# | 18 |
| ...SCENEDESMACEAE | | | | | | | | |
| ....ACTINASTRUM | -- | - | -- | - | 110 | 5 | -- | - |
| ....CRUCIGENIA | 170 | 4 | 130 | 11 | 55 | 2 | -- | - |
| ....SCENEDESMUS | 190 | 5 | 130 | 11 | 380# | 16 | -- | - |
| ....TETRASTRUM | -- | - | 52 | 4 | -- | - | -- | - |
| ..TETRASPORALES | | | | | | | | |
| ...COCCOMYXACEAE | | | | | | | | |
| ....ELAKATOTHRIX | -- | - | -- | - | 41 | 2 | -- | - |
| ..VOLVOCALES | | | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | | | |
| ....CHLAMYDOMONAS | 24 | 1 | 39 | 3 | 69 | 3 | 39 | 3 |
| ....POLYTOMA | -- | - | -- | - | 14 | 1 | -- | - |
| ..ZYGNEMATALES | | | | | | | | |
| ...DESMIDIACEAE | | | | | | | | |
| ....SPONDYLOSIUM | -- | - | -- | - | -- | - | -- | - |
| CHRYSOPHYTA | | | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | | | |
| ..CENTRALES | | | | | | | | |
| ...COSCINODISCACEAE | | | | | | | | |
| ....CYCLOTELLA | 500 | 12 | 90 | 8 | 96 | 4 | 26 | 2 |
| ....MELOSIRA | -- | - | 160 | 13 | 55 | 2 | 90 | 8 |
| ....SKELETONEMA | 140 | 4 | -- | - | -- | - | -- | - |
| ..PENNALES | | | | | | | | |
| ...ACHNANTHACEAE | | | | | | | | |
| ....ACHNANTHES | -- | - | -- | - | 27 | 1 | -- | - |
| ...CYMBELLACEAE | | | | | | | | |
| ....CYMBELLA | -- | - | 13 | 1 | -- | - | -- | - |
| ...FRAGILARIACEAE | | | | | | | | |
| ....FRAGILARIA | -- | - | -- | - | -- | - | -- | - |
| ....SYNEDRA | -- | - | -- | - | -- | - | -- | - |
| ...GOMPHONEMATACEAE | | | | | | | | |
| ....GOMPHONEMA | * | 0 | -- | - | -- | - | -- | - |
| ...NAVICULACEAE | | | | | | | | |
| ....GYROSIGMA | -- | - | -- | - | -- | - | -- | - |
| ....NAVICULA | -- | - | 13 | 1 | 41 | 2 | 13 | 1 |
| ...NITZSCHIACEAE | | | | | | | | |
| ....NITZSCHIA | 180 | 4 | 260# | 22 | 120 | 5 | 77 | 7 |
| .XANTHOPHYCEAE | | | | | | | | |
| ..HETEROCOCCALES | | | | | | | | |
| ...CHLOROTHECIACEAE | | | | | | | | |
| ....OPHIOCYTIUM | -- | - | -- | - | 14 | 1 | 13 | 1 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | | | |
| .CRYPTOPHYCEAE | | | | | | | | |
| ..CRYPTOMONADALES | | | | | | | | |
| ...CRYPTOMONADACEAE | | | | | | | | |
| ....CRYPTOMONAS | -- | - | -- | - | -- | - | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 08041000 NECHES RIVER AT EVADALE, TX--Continued

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980--Continued

| DATE<br>TIME | NOV 14,79<br>1330 | | MAR 24,80<br>1615 | | MAY 28,80<br>1415 | | JUN 24,80<br>1605 | |
|---|---|---|---|---|---|---|---|---|
| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | | | |
| .CYANOPHYCEAE | | | | | | | | |
| ..CHROOCOCCALES | | | | | | | | |
| ...CHROOCOCCACEAE | | | | | | | | |
| ....AGMENELLUM | -- | - | -- | - | 330 | 14 | -- | - |
| ....ANACYSTIS | 1900# | 47 | 230# | 20 | 110 | 5 | 90 | 8 |
| ....COCCOCHLORIS | -- | - | -- | - | 14 | 1 | -- | - |
| ..HORMOGONALES | | | | | | | | |
| ...NOSTOCACEAE | | | | | | | | |
| ....ANABAENA | 72 | 2 | -- | - | -- | - | -- | - |
| ....ANABAENOPSIS | -- | - | -- | - | -- | - | -- | - |
| ....APHANIZOMENON | -- | - | -- | - | -- | - | 140 | 12 |
| ...OSCILLATORIACEAE | | | | | | | | |
| ....LYNGBYA | -- | - | -- | - | -- | - | -- | - |
| ....OSCILLATORIA | -- | - | -- | - | 96 | 4 | -- | - |
| ....SCHIZOTHRIX | 180 | 4 | -- | - | -- | - | -- | - |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | | | |
| .EUGLENOPHYCEAE | | | | | | | | |
| ..EUGLENALES | | | | | | | | |
| ...EUGLENACEAE | | | | | | | | |
| ....EUGLENA | * | 0 | -- | - | -- | - | -- | - |
| ....PHACUS | -- | - | -- | - | -- | - | 13 | 1 |
| ....TRACHELOMONAS | -- | - | -- | - | 14 | 1 | 13 | 1 |
| PYRRHOPHYTA (FIRE ALGAE) | | | | | | | | |
| .DINOPHYCEAE | | | | | | | | |
| ..PERIDINIALES | | | | | | | | |
| ...GLENODINIACEAE | | | | | | | | |
| ....GLENODINIUM | -- | - | -- | - | -- | - | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE<br>TIME | JUL 29,80<br>1615 | | AUG 26,80<br>1715 | | SEP 15,80<br>1555 | |
|---|---|---|---|---|---|---|
| TOTAL CELLS/ML | 7600 | | 40000 | | 15000 | |
| DIVERSITY: DIVISION | 1.0 | | 0.3 | | 1.0 | |
| .CLASS | 1.0 | | 0.3 | | 1.0 | |
| ..ORDER | 1.8 | | 0.6 | | 1.9 | |
| ...FAMILY | 2.1 | | 1.3 | | 2.5 | |
| ....GENUS | 2.7 | | 1.5 | | 2.6 | |
| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | -- | - | * | 0 | -- | - |
| ...COELASTRACEAE | | | | | | |
| ....COELASTRUM | -- | - | 290 | 1 | 750 | 5 |
| ...HYDRODICTYACEAE | | | | | | |
| ....PEDIASTRUM | -- | - | * | 0 | 350 | 2 |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 210 | 3 | 380 | 1 | 170 | 1 |
| ....CHLORELLA | -- | - | -- | - | -- | - |
| ....CHODATELLA | * | 0 | -- | - | -- | - |
| ....DICTYOSPHAERIUM | * | 0 | * | 0 | -- | - |
| ....KIRCHNERIELLA | -- | - | -- | - | -- | - |
| ....OOCYSTIS | 130 | 2 | * | 0 | * | 0 |
| ....TETRAEDRON | -- | - | * | 0 | * | 0 |
| ....TREUBARIA | -- | - | -- | - | -- | - |
| ....WESTELLA | 51 | 1 | -- | - | 120 | 1 |
| ...SCENEDESMACEAE | | | | | | |
| ....ACTINASTRUM | -- | - | -- | - | -- | - |
| ....CRUCIGENIA | -- | - | * | 0 | 120 | 1 |
| ....SCENEDESMUS | 390 | 5 | 290 | 1 | 750 | 5 |
| ....TETRASTRUM | 100 | 1 | -- | - | -- | - |
| ..TETRASPORALES | | | | | | |
| ...COCCOMYXACEAE | | | | | | |
| ....ELAKATOTHRIX | -- | - | -- | - | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | * | 0 | * | 0 | 140 | 1 |
| ....POLYTOMA | -- | - | -- | - | -- | - |
| ..ZYGNEMATALES | | | | | | |
| ...DESMIDIACEAE | | | | | | |
| ....SPONDYLOSIUM | -- | - | -- | - | * | 0 |

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## 08041000 NECHES RIVER AT EVADALE, TX--Continued

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980--Continued

| DATE<br>TIME | JUL 29,80<br>1615 | | AUG 26,80<br>1715 | | SEP 15,80<br>1555 | |
|---|---|---|---|---|---|---|
| ORGANISM | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 150 | 2 | * | 0 | 320 | 2 |
| ....MELOSIRA | 140 | 2 | * | 0 | * | 0 |
| ....SKELETONEMA | -- | - | -- | - | -- | - |
| ..PENNALES | | | | | | |
| ...ACHNANTHACEAE | | | | | | |
| ....ACHNANTHES | -- | - | -- | - | -- | - |
| ...CYMBELLACEAE | | | | | | |
| ....CYMBELLA | -- | - | -- | - | -- | - |
| ...FRAGILARIACEAE | | | | | | |
| ....FRAGILARIA | * | 0 | -- | - | -- | - |
| ....SYNEDRA | -- | - | -- | - | * | 0 |
| ...GOMPHONEMATACEAE | | | | | | |
| ....GOMPHONEMA | -- | - | -- | - | -- | - |
| ...NAVICULACEAE | | | | | | |
| ....GYROSIGMA | -- | - | * | 0 | -- | - |
| ....NAVICULA | 120 | 2 | -- | - | * | 0 |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 190 | 3 | 320 | 1 | 350 | 2 |
| .XANTHOPHYCEAE | | | | | | |
| ..HETEROCOCCALES | | | | | | |
| ...CHLOROTHECIACEAE | | | | | | |
| ....OPHIOCYTIUM | * | 0 | -- | - | -- | - |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | -- | - | * | 0 | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | 460 | 6 | 230 | 1 | 230 | 2 |
| ....ANACYSTIS | 3800# | 51 | 960 | 2 | 6200# | 41 |
| ....COCCOCHLORIS | -- | - | -- | - | -- | - |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENA | 210 | 3 | -- | - | -- | - |
| ....ANABAENOPSIS | 1200# | 16 | 6700# | 17 | 1200 | 8 |
| ....APHANIZOMENON | -- | - | -- | - | -- | - |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | 260 | 3 | 29000# | 73 | 4000# | 27 |
| ....OSCILLATORIA | -- | - | 810 | 2 | -- | - |
| ....SCHIZOTHRIX | -- | - | -- | - | -- | - |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....EUGLENA | 39 | 1 | -- | - | -- | - |
| ....PHACUS | -- | - | -- | - | -- | - |
| ....TRACHELOMONAS | -- | - | -- | - | -- | - |
| PYRRHOPHYTA (FIRE ALGAE) | | | | | | |
| .DINOPHYCEAE | | | | | | |
| ..PERIDINIALES | | | | | | |
| ...GLENODINIACEAE | | | | | | |
| ....GLENODINIUM | -- | - | -- | - | * | 0 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 108320 | 123 | 73 | 21200 | 15 | 4500 | 15 | 4360 | 26 |
| NOV. | 1979 | 74760 | 139 | 81 | 16300 | 18 | 3540 | 17 | 3390 | 29 |
| DEC. | 1979 | 207710 | 134 | 78 | 44000 | 17 | 9470 | 16 | 9110 | 28 |
| JAN. | 1980 | 210330 | 160 | 91 | 51900 | 20 | 11600 | 19 | 11000 | 32 |
| FEB. | 1980 | 345870 | 135 | 79 | 74000 | 17 | 16000 | 16 | 15300 | 29 |
| MAR. | 1980 | 271060 | 159 | 91 | 66800 | 20 | 15000 | 19 | 14200 | 32 |
| APR. | 1980 | 413100 | 135 | 79 | 88000 | 17 | 19000 | 16 | 18200 | 29 |
| MAY | 1980 | 416600 | 116 | 69 | 77100 | 14 | 16200 | 14 | 15800 | 25 |
| JUNE | 1980 | 318490 | 142 | 83 | 71200 | 18 | 15500 | 17 | 14900 | 30 |
| JULY | 1980 | 125460 | 147 | 85 | 28900 | 19 | 6340 | 18 | 6050 | 31 |
| AUG. | 1980 | 98590 | 146 | 85 | 22500 | 19 | 4930 | 18 | 4710 | 30 |
| SEPT | 1980 | 74770 | 144 | 83 | 16900 | 18 | 3680 | 17 | 3520 | 30 |
| TOTAL | | 2665060 | ** | ** | 579000 | ** | 126000 | ** | 120000 | ** |
| WTD. AVG. | | 7282 | 138 | 80 | ** | 17 | ** | 17 | ** | 29 |

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 87 | 112 | 137 | 153 | 127 | 150 | 134 | 131 | 128 | 145 | 142 | 144 |
| 2 | 97 | 111 | 132 | 158 | 122 | 155 | 135 | 132 | 133 | 146 | 142 | 146 |
| 3 | 102 | 100 | 131 | 159 | 123 | 158 | 114 | 138 | 137 | 148 | 141 | 145 |
| 4 | 109 | 120 | 122 | 161 | 125 | 156 | 105 | 141 | 140 | 147 | 140 | 145 |
| 5 | 114 | 139 | 126 | 158 | 131 | 155 | 106 | 145 | 142 | 147 | 142 | 142 |
| 6 | 117 | 148 | 125 | 170 | 136 | 154 | 110 | 144 | 143 | 148 | 143 | 141 |
| 7 | 120 | 153 | 132 | 167 | 144 | 152 | 116 | 143 | 149 | 150 | 141 | 143 |
| 8 | 124 | 161 | 134 | 166 | 150 | 157 | 125 | 144 | 143 | 148 | 142 | 144 |
| 9 | 127 | 155 | 135 | 164 | 154 | 166 | 132 | 149 | 144 | 150 | 145 | 143 |
| 10 | 129 | 157 | 136 | 168 | 140 | 163 | 140 | 146 | 143 | 149 | 147 | 144 |
| 11 | 129 | 155 | 142 | 167 | 138 | 167 | 144 | 147 | 143 | 151 | 148 | 146 |
| 12 | 130 | 145 | 176 | 165 | 133 | 165 | 135 | 149 | 142 | 151 | 147 | 145 |
| 13 | 132 | 150 | 155 | 162 | 118 | 164 | 138 | 148 | 141 | 150 | 146 | 146 |
| 14 | 131 | 156 | 147 | 170 | 122 | 163 | 132 | 148 | 144 | 150 | 147 | 145 |
| 15 | 134 | 159 | 148 | 173 | 113 | 165 | 131 | 146 | 143 | 151 | 148 | 148 |
| 16 | 133 | 160 | 157 | 170 | 121 | 167 | 147 | 135 | 141 | 150 | 149 | 146 |
| 17 | 138 | 159 | 136 | 168 | 132 | 168 | 142 | 121 | 140 | 150 | 148 | 145 |
| 18 | 141 | 160 | 125 | 170 | 133 | 160 | 141 | 125 | 142 | 150 | 149 | 146 |
| 19 | 139 | 159 | 116 | 171 | 136 | 155 | 145 | 114 | 140 | 140 | 146 | 145 |
| 20 | 138 | 159 | 122 | 164 | 137 | 159 | 165 | 109 | 146 | 146 | 147 | 140 |
| 21 | 140 | 157 | 123 | 162 | 139 | 161 | 149 | 82 | 161 | 144 | 146 | 141 |
| 22 | 139 | 156 | 125 | 170 | 141 | 158 | 150 | 92 | 157 | 145 | 146 | 142 |
| 23 | 140 | 140 | 130 | 127 | 144 | 166 | 151 | 88 | 150 | 146 | 148 | 143 |
| 24 | 141 | 137 | 127 | 138 | 148 | 170 | 151 | 94 | 145 | 145 | 146 | 142 |
| 25 | 150 | 133 | 130 | 161 | 150 | 179 | 148 | 79 | 147 | 147 | 147 | 141 |
| 26 | 155 | 152 | 135 | 168 | 153 | 183 | 146 | 78 | 146 | 148 | 148 | 141 |
| 27 | 148 | 147 | 136 | 167 | 155 | 174 | 141 | 80 | 145 | 146 | 146 | 142 |
| 28 | 149 | 132 | 140 | 165 | 150 | 171 | 133 | 88 | 144 | 144 | 148 | 147 |
| 29 | 149 | 122 | 148 | 154 | 155 | 143 | 125 | 100 | 146 | 143 | 149 | 146 |
| 30 | 140 | 125 | 150 | 143 | --- | 153 | 123 | 110 | 145 | 142 | 148 | [illegible] |
| 31 | 125 | --- | 153 | 140 | --- | 136 | --- | 120 | --- | 143 | 149 | --- |
| MEAN | 131 | 144 | 136 | 161 | 137 | 161 | 135 | 121 | 144 | 147 | 146 | 144 |

## 08041000 NECHES RIVER AT EVADALE, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR. | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | --- | 19.0 | 12.0 | 11.0 | 10.0 | --- | --- | 22.0 | 27.0 | 31.0 | 31.0 | 30.0 |
| 2 | --- | 19.0 | 11.0 | 11.0 | 7.0 | 11.0 | --- | 22.0 | 27.0 | 32.0 | 30.0 | 30.0 |
| 3 | --- | 19.0 | 11.0 | 10.0 | 8.0 | 11.0 | --- | 22.0 | 28.0 | 32.0 | 30.0 | 30.0 |
| 4 | --- | 18.0 | 12.0 | 10.0 | 9.0 | 11.0 | --- | 22.0 | 28.0 | 32.0 | 30.0 | 30.0 |
| 5 | --- | 18.0 | 12.0 | 10.0 | 10.0 | 14.0 | --- | 23.0 | 28.0 | 32.0 | 30.0 | 30.0 |
| 6 | --- | 18.0 | 12.0 | 10.0 | 10.0 | 13.0 | --- | 23.0 | 28.0 | 32.0 | 30.0 | 30.0 |
| 7 | --- | 19.0 | 12.0 | 10.0 | 9.0 | 15.0 | --- | 24.0 | 28.0 | 32.0 | 30.0 | 29.0 |
| 8 | --- | 18.0 | 12.0 | 10.0 | --- | 17.0 | --- | 24.0 | 28.0 | 32.0 | 30.0 | 28.0 |
| 9 | --- | 18.0 | 12.0 | 10.0 | 8.0 | 18.0 | --- | 24.0 | 26.0 | 32.0 | 30.0 | 29.0 |
| 10 | --- | 17.0 | 13.0 | 11.0 | 8.0 | 18.0 | --- | 24.0 | 27.0 | 32.0 | 30.0 | 29.0 |
| 11 | --- | 17.0 | 15.0 | 13.0 | 8.0 | 17.0 | --- | 25.0 | 28.0 | 32.0 | --- | 30.0 |
| 12 | --- | 17.0 | 13.0 | 12.0 | 8.0 | 18.0 | --- | 25.0 | 28.0 | 32.0 | 30.0 | 30.0 |
| 13 | --- | 16.0 | 12.0 | 13.0 | 8.0 | 18.0 | --- | 25.0 | 28.0 | 32.0 | 30.0 | 30.0 |
| 14 | --- | 15.0 | 12.0 | 13.0 | 9.0 | 17.0 | --- | 24.0 | --- | 32.0 | 30.0 | 30.0 |
| 15 | --- | 14.0 | 12.0 | 13.0 | 10.0 | 17.0 | 19.0 | 24.0 | 28.0 | 32.0 | 30.0 | 30.0 |
| 16 | --- | 14.0 | 12.0 | 15.0 | 8.0 | 17.0 | 19.0 | --- | 29.0 | 33.0 | 30.0 | 30.0 |
| 17 | --- | 14.0 | 11.0 | 15.0 | 8.0 | 17.0 | 19.0 | 24.0 | 29.0 | 32.0 | 30.0 | 30.0 |
| 18 | --- | 17.0 | 10.0 | 15.0 | 8.0 | 18.0 | 18.0 | 24.0 | 29.0 | 32.0 | 30.0 | 30.0 |
| 19 | --- | 17.0 | 10.0 | 16.0 | 12.0 | 17.0 | 20.0 | 23.0 | 29.0 | 32.0 | 30.0 | 29.0 |
| 20 | --- | 16.0 | 11.0 | 17.0 | 13.0 | 19.0 | 21.0 | 24.0 | 29.0 | 30.0 | 30.0 | 29.0 |
| 21 | --- | 16.0 | 12.0 | 17.0 | 15.0 | 18.0 | 20.0 | 25.0 | 29.0 | 30.0 | 30.0 | 29.0 |
| 22 | 25.0 | 15.0 | 14.0 | 14.0 | 15.0 | 19.0 | 20.0 | 24.0 | 29.0 | 30.0 | 30.0 | 30.0 |
| 23 | 24.0 | 15.0 | 12.0 | 13.0 | 15.0 | 18.0 | 21.0 | 25.0 | 30.0 | 31.0 | 30.0 | 29.0 |
| 24 | 23.0 | 14.0 | 13.0 | 12.0 | 17.0 | 18.0 | 21.0 | 25.0 | 29.0 | 31.0 | 30.0 | 30.0 |
| 25 | 24.0 | 14.0 | 13.0 | 13.0 | 15.0 | 17.0 | 21.0 | 26.0 | 30.0 | 31.0 | 30.0 | 30.0 |
| 26 | 24.0 | 14.0 | --- | 13.0 | 15.0 | 17.0 | 20.0 | 26.0 | 30.0 | 30.0 | 30.0 | 29.0 |
| 27 | 24.0 | 14.0 | 13.0 | 13.0 | 17.0 | 17.0 | 20.0 | 26.0 | 30.0 | 30.0 | 30.0 | 29.0 |
| 28 | 24.0 | 13.0 | 12.0 | 13.0 | 17.0 | 18.0 | 20.0 | 27.0 | 31.0 | 28.0 | 30.0 | 29.0 |
| 29 | 24.0 | 13.0 | 12.0 | 12.0 | 17.0 | 17.0 | 22.0 | 27.0 | 30.0 | 31.0 | 30.0 | 29.0 |
| 30 | 23.0 | 12.0 | 11.0 | 12.0 | --- | --- | 20.0 | 27.0 | 31.0 | 31.0 | 30.0 | 28.0 |
| 31 | 22.0 | --- | 11.0 | 11.0 | --- | --- | --- | 27.0 | --- | --- | 30.0 | --- |
| MEAN | 23.5 | 16.0 | 12.0 | 12.5 | 11.0 | 16.5 | 20.0 | 24.5 | 28.5 | 31.5 | 30.0 | 29.5 |

## 08041500 VILLAGE CREEK NEAR KOUNTZE, TX

LOCATION.--Lat 30°23'52", long 94°15'48", Hardin County, Hydrologic Unit 12020006, at downstream side of bridge on Farm Road 418, 1.6 mi (2.6 km) upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 3.1 mi (5.0 km) upstream from Cypress Creek, 3.4 mi (5.5 km) northeast of Kountze, and 4.3 mi (6.9 km) downstream from Beech Creek.

DRAINAGE AREA.--860 mi² (2,227 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1924 to September 1927, October 1927 to November 1929 (discharge measurements only), April 1939 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 25.12 ft (7.657 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 30, 1939, nonrecording gage at site 1.6 mi (2.6 km) downstream at different datum. Apr. 30, 1939, to Sept. 30, 1966, water-stage recorder at site 2,000 ft (610 m) downstream at present datum.

REMARKS.--Water-discharge records good. Small diversions above station.

AVERAGE DISCHARGE.--44 years, 839 ft³/s (23.76 m³/s), 13.25 in/yr (337 mm/yr), 607,900 acre-ft/yr (750 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 67,200 ft³/s (1,900 m³/s) Nov. 26, 1940, gage height, 27.6 ft (8.41 m), former site, from floodmark, from rating curve extended above 32,000 ft³/s (906 m³/s); minimum not determined, probably occurred during period of no gage-height record Sept. 16 to Oct. 3, 1956; minimum daily, 16 ft³/s (0.45 m³/s) Oct. 1, 2, 1956.

Flood of May 27, 1929, reached a stage of about 32 ft (9.8 m) at site 2,000 ft (610 m) downstream at present datum; stage was determined on basis of information by engineers of Gulf, Colorado, and Santa Fe Railway Co. for site 1.6 mi (2.6 km) downstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1884, about 34 ft (10.4 m) in August 1915 at site 2,000 ft (610 m) downstream at present datum; stage was determined on basis of information by engineers of Gulf, Colorado, and Santa Fe Railway Co. for site 1.6 mi (2.6 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,180 ft³/s (260 m³/s) Mar. 31 at 1900 hours, gage height, 18.01 ft (5.489 m); minimum, 59 ft³/s (1.67 m³/s) Aug. 28-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 491 | 2400 | 888 | 1130 | 1050 | 714 | 8110 | 2230 | 523 | 155 | 118 | 69 |
| 2 | 456 | 2790 | 765 | 1040 | 1140 | 927 | 6160 | 1190 | 471 | 147 | 113 | 83 |
| 3 | 428 | 3310 | 680 | 941 | 1190 | 1060 | 4830 | 912 | 435 | 143 | 102 | 86 |
| 4 | 401 | 3420 | 600 | 921 | 1110 | 1060 | 3480 | 846 | 404 | 139 | 94 | 79 |
| 5 | 374 | 2550 | 565 | 975 | 1030 | 939 | 2390 | 746 | 377 | 134 | 90 | 78 |
| 6 | 352 | 1410 | 579 | 1060 | 968 | 916 | 1650 | 630 | 353 | 129 | 89 | 109 |
| 7 | 332 | 804 | 598 | 1000 | 919 | 904 | 1210 | 555 | 332 | 123 | 89 | 142 |
| 8 | 316 | 639 | 572 | 888 | 927 | 850 | 1030 | 502 | 314 | 119 | 90 | 149 |
| 9 | 306 | 600 | 508 | 812 | 1800 | 752 | 974 | 464 | 299 | 115 | 88 | 197 |
| 10 | 296 | 640 | 480 | 767 | 3420 | 710 | 908 | 457 | 288 | 112 | 85 | 194 |
| 11 | 289 | 630 | 484 | 742 | 4630 | 660 | 804 | 472 | 289 | 111 | 89 | 158 |
| 12 | 281 | 566 | 570 | 858 | 5280 | 623 | 865 | 439 | 291 | 108 | 98 | 138 |
| 13 | 271 | 497 | 1010 | 842 | 5360 | 605 | 1110 | 406 | 280 | 105 | 86 | 124 |
| 14 | 263 | 439 | 1450 | 761 | 4680 | 584 | 1720 | 463 | 254 | 103 | 80 | 114 |
| 15 | 257 | 401 | 1850 | 682 | 3450 | 546 | 2170 | 723 | 236 | 100 | 79 | 106 |
| 16 | 252 | 377 | 2290 | 624 | 2500 | 503 | 2590 | 1610 | 224 | 97 | 79 | 98 |
| 17 | 249 | 360 | 2630 | 579 | 2050 | 619 | 2490 | 4570 | 216 | 95 | 78 | 93 |
| 18 | 246 | 352 | 2430 | 565 | 1840 | 856 | 1890 | 5670 | 208 | 92 | 75 | 90 |
| 19 | 244 | 380 | 1840 | 557 | 1700 | 939 | 1210 | 6670 | 202 | 89 | 73 | 121 |
| 20 | 244 | 460 | 1170 | 1020 | 1490 | 925 | 863 | 6150 | 186 | 94 | 72 | 141 |
| 21 | 242 | 430 | 842 | 2270 | 1300 | 1260 | 735 | 4730 | 203 | 101 | 71 | 146 |
| 22 | 278 | 667 | 765 | 3320 | 1170 | 1690 | 653 | 3900 | 262 | 102 | 70 | 211 |
| 23 | 438 | 1400 | 767 | 5600 | 1100 | 1690 | 586 | 3970 | 327 | 107 | 68 | 189 |
| 24 | 582 | 2090 | 910 | 6270 | 1020 | 1510 | 537 | 3280 | 306 | 101 | 66 | 152 |
| 25 | 623 | 2780 | 1130 | 5330 | 923 | 1270 | 519 | 2280 | 297 | 102 | 64 | 139 |
| 26 | 508 | 3460 | 1320 | 4300 | 830 | 1170 | 915 | 1440 | 260 | 103 | 62 | 129 |
| 27 | 438 | 3670 | 1500 | 3350 | 716 | 1300 | 1830 | 933 | 220 | 101 | 62 | 120 |
| 28 | 383 | 2860 | 1460 | 2380 | 662 | 2690 | 3230 | 749 | 196 | 100 | 60 | 113 |
| 29 | 348 | 1870 | 1340 | 1680 | 640 | 5010 | 3970 | 771 | 177 | 104 | 59 | 107 |
| 30 | 346 | 1190 | 1230 | 1250 | --- | 7220 | 3560 | 753 | 166 | 108 | 60 | 114 |
| 31 | 1440 | --- | 1160 | 1070 | --- | 8890 | --- | 604 | --- | 120 | 66 | --- |
| TOTAL | 11974 | 43442 | 34383 | 53584 | 54895 | 49392 | 62989 | 59115 | 8596 | 3459 | 2475 | 3789 |
| MEAN | 386 | 1448 | 1109 | 1729 | 1893 | 1593 | 2100 | 1907 | 287 | 112 | 79.8 | 126 |
| MAX | 1440 | 3670 | 2630 | 6270 | 5360 | 8890 | 8110 | 6670 | 523 | 155 | 118 | 211 |
| MIN | 242 | 352 | 480 | 557 | 640 | 503 | 519 | 406 | 166 | 89 | 59 | 69 |
| CFSM | .45 | 1.68 | 1.29 | 2.01 | 2.20 | 1.85 | 2.44 | 2.22 | .33 | .13 | .09 | .15 |
| IN. | .52 | 1.88 | 1.49 | 2.32 | 2.37 | 2.14 | 2.72 | 2.56 | .37 | .15 | .11 | .16 |
| AC-FT | 23750 | 86170 | 68200 | 106300 | 108900 | 97970 | 124900 | 117300 | 17050 | 6860 | 4910 | 7520 |

CAL YR 1979 TOTAL 757076 MEAN 2074 MAX 44600 MIN 161 CFSM 2.41 IN 32.75 AC-FT 1502000
WTR YR 1980 TOTAL 388093 MEAN 1060 MAX 8890 MIN 59 CFSM 1.23 IN 16.79 AC-FT 769800

## 08041500 VILLAGE CREEK NEAR KOUNTZE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1967 to current year. Water temperatures: November 1967 to September 1970.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|
| NOV | | | | | | | | | |
| 16... | 1230 | 377 | 90 | 12.0 | 16 | 7 | 4.1 | 1.3 | 9.2 |
| JAN | | | | | | | | | |
| 11... | 1100 | 719 | 84 | 12.0 | 14 | 6 | 4.4 | .8 | 9.2 |
| MAR | | | | | | | | | |
| 18... | 1230 | 910 | 87 | 17.5 | 15 | 9 | 4.0 | 1.2 | 9.9 |
| MAY | | | | | | | | | |
| 05... | 1600 | 718 | 71 | 21.5 | 15 | 2 | 4.0 | 1.1 | 8.7 |
| JUN | | | | | | | | | |
| 11... | 1110 | 288 | 86 | 21.0 | 18 | 7 | 4.9 | 1.4 | 9.7 |
| JUL | | | | | | | | | |
| 22... | 1500 | 103 | 100 | 25.0 | 18 | 5 | 5.2 | 1.3 | 11 |
| SEP | | | | | | | | | |
| 03... | 1510 | 85 | 83 | 27.0 | 15 | 6 | 4.2 | 1.2 | 8.0 |

| DATE | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| NOV | | | | | | | | | |
| 16... | 1.0 | 1.0 | 10 | 0 | 1.9 | 17 | .1 | 15 | 55 |
| JAN | | | | | | | | | |
| 11... | 1.1 | .8 | 10 | 0 | 1.4 | 18 | .1 | 14 | 54 |
| MAR | | | | | | | | | |
| 18... | 1.1 | .9 | 7 | 0 | 3.2 | 20 | .1 | 11 | 54 |
| MAY | | | | | | | | | |
| 05... | 1.0 | .8 | 15 | 0 | 2.4 | 14 | .0 | 12 | 50 |
| JUN | | | | | | | | | |
| 11... | 1.0 | 1.0 | 14 | 0 | 1.2 | 18 | .1 | 14 | 57 |
| JUL | | | | | | | | | |
| 22... | 1.1 | 1.3 | 16 | 0 | 2.4 | 20 | .1 | 13 | 62 |
| SEP | | | | | | | | | |
| 03... | .9 | 1.4 | 12 | 0 | 2.2 | 15 | .1 | 12 | 50 |

## 08041700 PINE ISLAND BAYOU NEAR SOUR LAKE, TX

LOCATION.--Lat 30°06'21", long 94°20'04", Jefferson-Hardin County line, Hydrologic Unit [illegible], on right bank at downstream side of bridge on county road 5.1 mi (8.2 km) southeast of Sour Lake.

DRAINAGE AREA.--336 mi² (870 km²).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. No known diversions. Low flow for period March through September usually sustained by drainage from ricefields. National Weather Service gage-height telemeter at this station.

AVERAGE DISCHARGE.--13 years, 472 ft³/s (13.37 m³/s), 342,000 acre-ft/yr (422 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,000 ft³/s (708 m³/s) Apr. 22, 1979, elevation, 34.29 ft (10.452 m); minimum daily, 0.38 ft³/s (0.011 m³/s) Nov. 5, 1978. Maximum stage since at least 1917, that of Apr. 22, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,000 ft³/s (170 m³/s) Jan. 24 at 1400 hours, 25 at 0400 hours, elevation, 28.81 ft (8.781 m); no flow Oct. 21.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 642 | 1000 | 193 | 160 | 1300 | 79 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | 215 | 1100 | 137 | 162 | 1120 | 84 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | 129 | 1130 | 101 | 139 | 772 | 108 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | 89 | 1070 | 81 | 132 | 460 | 116 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | 67 | 908 | 66 | 145 | 287 | 121 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | 52 | 736 | 53 | 161 | 226 | 112 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | 41 | 618 | 42 | 160 | 199 | 101 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | 32 | 417 | 37 | 120 | 193 | 91 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | 26 | 222 | 33 | 126 | 968 | 86 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | 20 | 140 | 28 | 126 | 1260 | 77 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | 16 | 120 | 24 | 110 | 1600 | 70 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | 12 | 109 | 21 | 97 | 1660 | 63 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | 8.6 | 91 | 21 | 89 | 1950 | 53 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | 7.0 | 70 | 31 | 78 | 2070 | 47 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | 4.7 | 53 | 100 | 69 | 1900 | 41 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | 3.0 | 41 | 280 | 61 | 1680 | 40 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | 2.7 | 32 | 342 | 56 | 1470 | 80 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | 1.8 | 26 | 361 | 64 | 1200 | 138 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | .99 | 21 | 381 | 77 | 917 | 213 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | .28 | 16 | 412 | 116 | 661 | 230 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | .00 | 13 | 366 | 702 | 486 | 323 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | 1.5 | 29 | 313 | 1720 | 376 | 273 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | 6.9 | 137 | 222 | 4120 | 303 | 253 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | 8.3 | 225 | 109 | 5630 | 232 | 260 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | 3.6 | 311 | 131 | 5900 | 179 | 303 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | 2.5 | 360 | 142 | 5290 | 140 | 427 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | 2.6 | 351 | 138 | 4220 | 110 | 1170 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | 2.5 | 360 | 125 | 1230 | 87 | 2370 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | 2.3 | 313 | 143 | 2700 | 60 | 2860 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | 35 | 281 | 130 | 2240 | --- | 4620 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | 863 | --- | 133 | 1870 | --- | 4700 | --- | [illegible] | --- | [illegible] | [illegible] | --- |
| TOTAL | 2148.67 | 10271 | 4976 | 40108 | 23804 | 27221 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MEAN | 69.3 | 342 | 161 | 1294 | 821 | 878 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MAX | 863 | 1130 | 412 | 5900 | 2070 | 4700 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MIN | .00 | 13 | 21 | 56 | 60 | 40 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| AC-FT | 4260 | 20370 | 9870 | 79710 | 47220 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

CAL YR 1979 TOTAL 429440.67 MEAN 1177 MAX [illegible] MIN .00 AC-FT [illegible]
WTR YR 1980 TOTAL 190275.37 MEAN 520 MAX 5900 MIN .00 AC-FT [illegible]

## 08041700 PINE ISLAND BAYOU NEAR SOUR LAKE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: February 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1968 to current year.
WATER TEMPERATURES: February 1968 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (1968-79): Maximum daily, 11,600 micromhos Mar. 23, 1968; minimum daily, 34 micromhos June 12,1975, July 28, 1979.
WATER TEMPERATURES (1968-76): Maximum daily, 37.0°C Sept. 15, 1972; minimum daily, 2.0°C Jan. 11, 1973.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | |
| 08... | 1830 | 30 | 155 | 6.9 | 23.0 | 35 | 2 | 11 | 1.8 | 19 |
| DEC | | | | | | | | | | |
| 07... | 1500 | 41 | 207 | -- | -- | 39 | 18 | 12 | 2.2 | 25 |
| JAN | | | | | | | | | | |
| 24... | 1700 | 6000 | 66 | -- | -- | 14 | 5 | 4.1 | .9 | 7.5 |
| FEB | | | | | | | | | | |
| 06... | 1630 | 217 | 169 | -- | 12.5 | 30 | 10 | 9.4 | 1.5 | 21 |
| MAR | | | | | | | | | | |
| 20... | 1500 | 264 | 260 | -- | 17.5 | 45 | 22 | 14 | 2.4 | 26 |
| APR | | | | | | | | | | |
| 21... | 1800 | 159 | 165 | -- | -- | 35 | 16 | 11 | 1.9 | 14 |
| MAY | | | | | | | | | | |
| 05... | 1230 | 302 | 118 | -- | 22.5 | 23 | 3 | 7.4 | 1.2 | 13 |
| JUN | | | | | | | | | | |
| 11... | 1450 | 47 | 194 | -- | 23.5 | 42 | 18 | 13 | 2.3 | 19 |

| DATE | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | |
| 08... | 1.4 | 1.8 | 40 | 0 | 6.9 | 26 | .1 | 8.1 | 94 |
| DEC | | | | | | | | | |
| 07... | 1.7 | 2.2 | 26 | 0 | 9.9 | 45 | .0 | 7.2 | 116 |
| JAN | | | | | | | | | |
| 24... | .9 | 1.4 | 11 | 0 | 3.1 | 12 | .1 | 3.9 | 38 |
| FEB | | | | | | | | | |
| 06... | 1.7 | 1.7 | 24 | 0 | 8.9 | 32 | .1 | 5.8 | 92 |
| MAR | | | | | | | | | |
| 20... | 1.7 | 2.2 | 28 | 0 | 10 | 44 | .1 | 5.5 | 118 |
| APR | | | | | | | | | |
| 21... | 1.0 | 6.3 | 24 | 0 | 16 | 25 | .1 | 6.0 | 81 |
| MAY | | | | | | | | | |
| 05... | 1.2 | 1.6 | 24 | 0 | 5.3 | 20 | .0 | 6.2 | 65 |
| JUN | | | | | | | | | |
| 11... | 1.3 | 1.8 | 29 | 0 | 26 | 26 | .2 | 12 | 111 |

## 08041700 PINE ISLAND BAYOU NEAR SOUR LAKE, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | --- | --- | --- | --- | --- | 246 | 65 | 60 | --- | | | |
| 2 | 114 | --- | 160 | 205 | --- | --- | 80 | --- | --- | | | |
| 3 | 120 | --- | 168 | 225 | 131 | --- | --- | --- | 191 | | | |
| 4 | 128 | --- | 175 | 236 | 149 | 286 | --- | 86 | 152 | | | |
| 5 | --- | --- | 186 | 240 | 160 | 228 | --- | 112 | --- | | | |
| 6 | --- | --- | 195 | 214 | 169 | 233 | --- | --- | --- | | | |
| 7 | 150 | --- | 207 | --- | 166 | 293 | --- | --- | 186 | | | |
| 8 | 155 | 143 | 215 | 258 | 183 | --- | --- | 89 | 174 | | | |
| 9 | 157 | 160 | --- | 201 | --- | --- | --- | --- | --- | | | |
| 10 | 169 | 168 | --- | --- | 96 | --- | --- | --- | 182 | | | |
| 11 | --- | 247 | --- | 235 | 69 | --- | --- | 179 | 201 | | | |
| 12 | 194 | --- | 285 | 244 | --- | 308 | --- | 181 | 209 | | | |
| 13 | 209 | --- | 295 | 281 | 74 | 327 | --- | --- | --- | | | |
| 14 | 220 | 188 | 325 | --- | 67 | 355 | --- | 202 | --- | | | |
| 15 | 231 | 191 | 312 | --- | --- | --- | 156 | --- | 219 | | | |
| 16 | 238 | --- | --- | 269 | --- | --- | 135 | 86 | 269 | | | |
| 17 | 239 | --- | --- | --- | 72 | 328 | --- | --- | 217 | | | |
| 18 | 247 | 224 | 177 | --- | --- | --- | 123 | --- | 196 | | | |
| 19 | 256 | --- | 135 | 292 | --- | 203 | --- | 47 | 217 | | | |
| 20 | 266 | 255 | --- | --- | 116 | 197 | 117 | 55 | --- | | | |
| 21 | --- | --- | --- | 140 | --- | 180 | 165 | 63 | 207 | | | |
| 22 | 300 | 240 | --- | 63 | --- | 170 | 176 | --- | 192 | | | |
| 23 | 311 | 72 | --- | 74 | 152 | 160 | --- | --- | --- | | | |
| 24 | 465 | --- | --- | 68 | --- | --- | --- | --- | 194 | | | |
| 25 | 512 | 70 | --- | 66 | 165 | 151 | 403 | --- | 197 | | | |
| 26 | --- | --- | --- | --- | --- | --- | --- | --- | 211 | | | |
| 27 | --- | 80 | 197 | 65 | 187 | --- | --- | --- | 219 | | | |
| 28 | 277 | --- | --- | --- | 201 | 80 | --- | --- | --- | | | |
| 29 | --- | --- | 250 | --- | 227 | --- | 87 | 150 | --- | | | |
| 30 | --- | --- | 230 | --- | --- | 65 | --- | --- | 210 | | | |
| 31 | --- | --- | --- | 107 | --- | 71 | --- | 151 | --- | | | |
| MEAN | 236 | 170 | 220 | 183 | 140 | 216 | 151 | 112 | 202 | | | |

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | --- | | --- | --- | --- | 17.0 | 20.0 | --- | --- | | | |
| 2 | 23.0 | | --- | 11.0 | --- | --- | 20.5 | --- | --- | | | |
| 3 | 22.0 | | --- | 11.0 | 11.0 | --- | --- | --- | 28.5 | | | |
| 4 | 22.0 | | --- | 11.5 | 10.0 | 16.0 | --- | 23.0 | 17.0 | | | |
| 5 | --- | | --- | 16.0 | 15.0 | 16.0 | --- | 24.0 | --- | | | |
| 6 | --- | | --- | 13.0 | 12.5 | 16.0 | --- | --- | --- | | | |
| 7 | 23.0 | | --- | --- | --- | 18.5 | --- | --- | 31.5 | | | |
| 8 | 23.0 | | --- | 12.0 | 13.5 | 18.5 | --- | 23.0 | 28.5 | | | |
| 9 | 23.0 | | --- | 12.0 | --- | --- | --- | --- | --- | | | |
| 10 | --- | | --- | --- | 8.0 | --- | --- | --- | 29.0 | | | |
| 11 | --- | | --- | --- | 9.0 | --- | --- | 26.0 | 30.5 | | | |
| 12 | 22.5 | | --- | 15.5 | --- | 23.5 | --- | 26.0 | 28.5 | | | |
| 13 | 23.0 | | --- | --- | 14.0 | 21.0 | --- | --- | --- | | | |
| 14 | --- | | --- | --- | --- | 20.0 | --- | 26.0 | --- | | | |
| 15 | 20.0 | | --- | --- | --- | --- | 17.5 | --- | 30.0 | | | |
| 16 | --- | | --- | 10.0 | --- | --- | 19.0 | 23.0 | 31.0 | | | |
| 17 | --- | | --- | --- | 10.0 | 19.0 | --- | --- | 31.0 | | | |
| 18 | --- | | --- | --- | --- | --- | 20.0 | --- | 32.0 | | | |
| 19 | --- | | --- | 16.5 | --- | 17.5 | --- | 23.0 | 31.0 | | | |
| 20 | --- | | --- | --- | 13.0 | 17.5 | 23.0 | --- | --- | | | |
| 21 | --- | | --- | 10.0 | --- | 16.5 | --- | 26.5 | 29.5 | | | |
| 22 | --- | | --- | 17.0 | --- | 18.0 | 23.0 | --- | 31.0 | | | |
| 23 | --- | | --- | 10.0 | --- | 20.0 | --- | --- | --- | | | |
| 24 | --- | | --- | --- | --- | --- | --- | --- | 31.5 | | | |
| 25 | --- | | --- | --- | 19.0 | 18.5 | --- | --- | 33.0 | | | |
| 26 | --- | | --- | --- | --- | --- | --- | --- | 32.0 | | | |
| 27 | --- | | --- | 15.0 | 16.0 | --- | --- | --- | 31.5 | | | |
| 28 | --- | | --- | --- | 17.0 | 20.0 | --- | --- | --- | | | |
| 29 | --- | | 13.5 | --- | 17.0 | --- | 22.0 | 17.0 | --- | | | |
| 30 | --- | | 16.0 | --- | --- | 18.0 | --- | --- | 31.0 | | | |
| 31 | --- | | --- | 10.0 | --- | --- | --- | 17.0 | --- | | | |
| MEAN | 22.3 | | 16.0 | 14.0 | 13.0 | 18.3 | 21.0 | 23.0 | 30.0 | | | |

## 08042000 TAYLOR BAYOU NEAR LABELLE, TX

LOCATION.--Lat 29°52'30", long 94°09'34", Jefferson County, Hydrologic Unit 12040201, near center of stream at downstream side of bridge on county road, 0.7 mi (1.1 km) south of LaBelle, 6.0 mi (9.7 km) upstream from Hillebrandt Bayou, 7.2 mi (11.6 km) upstream from State Highway 73, and 11.2 mi (18.0 km) upstream from saltwater gates and barge locks. Distances are measured along rectified channel.

DRAINAGE AREA.--262 mi² (679 km²).

PERIOD OF RECORD.--April 1954 to current year, complete records for storms of 1.0 inch (25.4 mm) or more runoff, except for the period Sept. 10-22, 1961.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4.63 ft (1.411 m) below National Geodetic Vertical Datum of 1929, determined by several comparisons of water surface with auxiliary water-stage recorder 7.2 mi (11.6 km) downstream during times of no flow and ideal weather conditions.

REMARKS.--Records poor. Discharge is computed using fall as a factor. Discharge for recessions of large rises with insufficient fall are estimated. Small rises with insufficient fall are not computed. Low flow is regulated by drainage from ricefields and operation of saltwater gates and barge locks. An unknown amount of water is diverted above and below gage for rice irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,590 ft³/s (272 m³/s) Sept. 22, 1963, and Apr. 23, 1979; maximum gage height, 11.78 ft (3.591 m) Sept. 20, 1963 (backwater from Hillebrandt Bayou); minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.31 ft (0.704 m) July 17, 1954.
Maximum stage since at least 1941, that of Sept. 20, 1963, and Apr. 23, 1979. Flood of Sept. 13, 1961 (Hurricane Carla), reached a stage of 11.51 ft (3.508 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1941 reached a stage of 11.3 ft (3.44 m), from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,050 ft³/s (171 m³/s) Mar. 30 at 2400 hours; maximum gage height, 9.74 ft (2.969 m) Sept. 8 at 1500 hours; minimum discharge not determined (affected by tides and pumping); minimum gage height, 4.47 ft (1.362 m) Nov. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | --- | | --- | 4490 | --- | | | | --- |
| 2 | | | | --- | | --- | 2940 | --- | | | | --- |
| 3 | | | | --- | | --- | 1900 | --- | | | | --- |
| 4 | | | | --- | | --- | 1000 | --- | | | | --- |
| 5 | | | | --- | | --- | 500 | --- | | | | 300 |
| 6 | | | | --- | | --- | --- | --- | | | | 2720 |
| 7 | | | | --- | | --- | --- | --- | | | | 4580 |
| 8 | | | | --- | | --- | --- | --- | | | | 5580 |
| 9 | | | | --- | | --- | --- | --- | | | | 5880 |
| 10 | | | | --- | | --- | --- | --- | | | | 5670 |
| 11 | | | | --- | | --- | --- | --- | | | | 4980 |
| 12 | | | | --- | | --- | --- | --- | | | | 3660 |
| 13 | | | | --- | | --- | --- | --- | | | | 2120 |
| 14 | | | | --- | | --- | --- | --- | | | | 300 |
| 15 | | | | --- | | --- | --- | 300 | | | | --- |
| 16 | | | | --- | | --- | --- | 1510 | | | | --- |
| 17 | | | | --- | | --- | --- | 3070 | | | | --- |
| 18 | | | | --- | | --- | --- | 4230 | | | | --- |
| 19 | | | | --- | | --- | --- | 3990 | | | | --- |
| 20 | | | | 300 | | --- | --- | 6010 | | | | --- |
| 21 | | | | 2940 | | --- | --- | 3580 | | | | --- |
| 22 | | | | 4060 | | --- | --- | 2630 | | | | --- |
| 23 | | | | 5150 | | --- | --- | 1430 | | | | --- |
| 24 | | | | 4370 | | --- | --- | 300 | | | | --- |
| 25 | | | | 2880 | | --- | --- | --- | | | | --- |
| 26 | | | | 1200 | | --- | --- | --- | | | | --- |
| 27 | | | | 600 | | 1070 | --- | --- | | | | --- |
| 28 | | | | --- | | 4800 | --- | --- | | | | --- |
| 29 | | | | --- | | 5300 | --- | --- | | | | --- |
| 30 | | | | --- | | 5470 | --- | --- | | | | --- |
| 31 | | | | --- | | 1810 | --- | --- | | | | --- |
| TOTAL | | | | --- | | --- | --- | --- | | | | --- |
| MEAN | | | | --- | | --- | --- | --- | | | | --- |
| MAX | | | | --- | | --- | --- | --- | | | | --- |
| MIN | | | | --- | | --- | --- | --- | | | | --- |
| AC-FT | | | | --- | | --- | --- | --- | | | | --- |

CAL YR 1979 TOTAL = MEAN = MAX = MIN = AC-FT =
WTR YR 1980 TOTAL = MEAN = MAX = MIN = AC-FT =

## 08042500 HILLEBRANDT BAYOU NEAR LOVELL LAKE, TX

LOCATION.--Lat 29°55'44", long 94°06'35", Jefferson County, Hydrologic Unit 12040201, near center of stream at downstream side of bridge on county road, 1.3 mi (2.1 km) southeast of Lovell Lake, and 4.4 mi (7.1 km) upstream (along rectified channel) from Taylor Bayou.

DRAINAGE AREA.--128 mi² (332 km²).

PERIOD OF RECORD.--April 1954 to current year, complete records for storms of 1.0 inch (25.4 mm) or more runoff, except for the period Sept. 11-18, 1961.

GAGE.--Water-stage recorder. Auxiliary water-stage recorder 3.0 mi (4.8 km) downstream. Datum of gage is 4.63 ft (1.411 m) below National Geodetic Vertical Datum of 1929, determined by comparisons of water surface with Taylor Bayou near LaBelle, auxiliary gage 5.6 mi (9.0 km) downstream, during times of no flow and ideal weather conditions. Prior to Aug. 28, 1963, auxiliary water-stage recorder on Taylor Bayou 1.2 mi (1.9 km) downstream from Hillebrandt Bayou, nonrecording gages on Taylor Bayou 2.3 and 5.2 mi (3.7 and 8.4 km) downstream from Hillebrandt Bayou.

REMARKS.--Records poor. Discharge computed using fall as a factor. Discharge for recessions of large rises with insufficient fall are estimated. Small rises with insufficient fall are not computed. Low flow is regulated by drainage from ricefields and operation of saltwater gates and barge locks. An unknown amount of water is diverted above and below gage for rice irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s (425 m³/s) Sept. 18, 1963; maximum gage height, 12.34 ft (3.761 m) Sept. 19, 1963; minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.33 ft (0.710 m) July 17, 1954.
Maximum stage since 1941, 12.34 ft (3.761 m) Sept. 19, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,760 ft³/s (248 m³/s) Sept. 6 at 2400 hours; maximum gage height, 10.57 ft (3.222 m) Sept. 7 at 0400 hours; minimum discharge not determined (affected by tides and pumping); minimum gage height, about 4.5 ft (1.37 m) Nov. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | --- | | --- | | --- | | | | --- |
| 2 | | | | --- | | --- | | --- | | | | --- |
| 3 | | | | --- | | --- | | --- | | | | --- |
| 4 | | | | --- | | --- | | --- | | | | --- |
| 5 | | | | --- | | --- | | --- | | | | 300 |
| 6 | | | | --- | | --- | | --- | | | | 6740 |
| 7 | | | | --- | | --- | | --- | | | | 7720 |
| 8 | | | | --- | | --- | | --- | | | | 5120 |
| 9 | | | | --- | | --- | | --- | | | | 3360 |
| 10 | | | | --- | | --- | | --- | | | | 1990 |
| 11 | | | | --- | | --- | | --- | | | | 1020 |
| 12 | | | | --- | | --- | | --- | | | | 600 |
| 13 | | | | --- | | --- | | --- | | | | 300 |
| 14 | | | | --- | | --- | | --- | | | | --- |
| 15 | | | | --- | | --- | | --- | | | | --- |
| 16 | | | | --- | | --- | | 300 | | | | --- |
| 17 | | | | --- | | --- | | 2000 | | | | --- |
| 18 | | | | --- | | --- | | 1500 | | | | --- |
| 19 | | | | --- | | --- | | 1000 | | | | --- |
| 20 | | | | 100 | | --- | | 600 | | | | --- |
| 21 | | | | 980 | | --- | | 200 | | | | --- |
| 22 | | | | 1730 | | --- | | --- | | | | --- |
| 23 | | | | 1620 | | --- | | --- | | | | --- |
| 24 | | | | 400 | | --- | | --- | | | | --- |
| 25 | | | | --- | | --- | | --- | | | | --- |
| 26 | | | | --- | | 100 | | --- | | | | --- |
| 27 | | | | --- | | 3310 | | --- | | | | --- |
| 28 | | | | --- | | 5310 | | --- | | | | --- |
| 29 | | | | --- | | 3460 | | --- | | | | --- |
| 30 | | | | --- | | 2130 | | --- | | | | --- |
| 31 | | | | --- | | 500 | | --- | | | | --- |
| TOTAL | | | | --- | | --- | | --- | | | | --- |
| MEAN | | | | --- | | --- | | --- | | | | --- |
| MAX | | | | --- | | --- | | --- | | | | --- |
| MIN | | | | --- | | --- | | --- | | | | --- |
| AC-FT | | | | --- | | --- | | --- | | | | --- |

CAL YR 1979 TOTAL = MEAN = MAX = MIN = AC-FT =
WTR YR 1980 TOTAL = MEAN = MAX = MIN = AC-FT =

## 08042650 NORTH CREEK SUBWATERSHED NO. 28-A NEAR JERMYN, TX

LOCATION.--Lat 33°14'52", long 98°19'19", Jack County, Hydrologic Unit 12030101, near center of earthfill dam on unnamed tributary of North Creek, 0.2 mi (0.3 km) upstream from North Creek, and 4.0 mi (6.4 km) southeast of Jermyn.

DRAINAGE AREA.--6.82 mi$^2$ (17.66 km$^2$).

PERIOD OF RECORD.--March 1972 to September 1980 (discontinued).

GAGE.--Water-stage recorder and flat-crested weir on concrete drop inlet. Datum of gage is 1,090.39 ft (332.351 m) Soil Conservation Service datum. Prior to Oct. 5, 1972, staff gage at same datum.

REMARKS.--Records poor. The pool is formed by a rolled earthfill dam 1,800 ft (549 m) long with a 100-foot-wide (30 m) earthen spillway at the left end of dam. The crest of emergency spillway is at gage height 33.5 ft (10.21 m). The dam was completed in March 1972, and storage began May 12, 1972. The outlet structure consists of a 2.5- by 7.5-foot (0.8 by 2.3 m) uncontrolled concrete drop-inlet structure that is connected to a 30-inch (762 mm) concrete outlet pipe. The drop-inlet structure is also equipped with a 12-inch-diameter (305 mm) slide gate near the bottom of the tower with invert at a gage height of 8.61 ft (2.62 m). The crest of the drop inlet is at gage height 18.12 ft (5.52 m). The capacity of pool at crest of emergency spillway is 1,940 acre-ft (2.39 hm$^3$), the capacity at crest of the drop inlet is 245 acre-ft (302,000 m$^3$), and the capacity at the crest of the controlled outlet pipe is 24 acre-ft (29,600 m$^3$). The capacity table below 18.12 ft (5.52 m) was computed using the average-end-area method from a surface area table based on a survey of Mar. 14, 1972. The capacity table above 18.12 ft (5.52 m) was computed using the average-end-area method and based on an area table furnished by the Soil Conservation Service.

AVERAGE INFLOW.--8 years (water years 1973-80), 506 acre-ft/yr (624,000 m$^3$/yr), 1.39 in/yr (35 mm/yr).

AVERAGE OUTFLOW.--8 years (water years 1973-80), 272 acre-ft/yr (335,000 m$^3$/yr), 0.75 in/yr (19 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum inflow, 1,430 ft$^3$/s (40.5 m$^3$/s), average for 5-minute interval, Oct. 30, 1974, computed from change in pool contents and adjusted for rainfall on pool surface during time of peak inflow; no inflow at times each year. Maximum outflow, 96.2 ft$^3$/s (2.72 m$^3$/s) Oct. 30, 1974, gage height, 22.80 ft (6.949 m); no outflow most of time each year.

EXTREMES FOR CURRENT YEAR.--Maximum inflow, 238 ft$^3$/s (6.74 m$^3$/s) average for 5-minute interval, May 15 at 1540 hours, computed as explained above, no other peak above base of 200 ft$^3$/s (5.66 m$^3$/s); no inflow at times. No outflow during water year.

### POOL WATER BUDGET, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| | OCT. | NOV. | DEC. | JAN. | FEB. | MAR. | APR. | MAY | JUNE | JULY | AUG. | SEPT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTAL INFLOW 1/ | 3.0 | 0.1 | 4.0 | 2.2 | 3.9 | 0 | 0 | 82.6 | 0 | 0.1 | 5.0 | 154 |
| TOTAL OUTFLOW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| (†) | -16.1 | -14.6 | -2.5 | -7.2 | -5.3 | -11.3 | -12.9 | +75.8 | -27.4 | -26.3 | -18.9 | +148 |
| (‡) | 23.9 | 22.0 | 21.1 | 20.6 | 20.3 | 19.2 | 17.6 | 21.0 | 24.1 | 20.9 | 18.4 | 17.6 |
| (††) | 2.42 | .58 | 2.90 | 1.35 | 1.17 | .93 | .82 | 6.74 | 0 | .72 | .53 | 6.78 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| CAL YR 1979 | INFLOW | 206 | OUTFLOW | 0 | † -60.4 | ‡ | 28.9 | †† | 28.70 |
| WTR YR 1980 | INFLOW | 255 | OUTFLOW | 0 | † +81.3 | ‡ | 20.6 | †† | 24.94 |

1/ Inflow adjusted for rainfall on pool and pool losses.
† Change in contents, in acre-feet.
‡ Mean surface area, in acres.
†† Rainfall, in inches.

## 08042700 NORTH CREEK NEAR JACKSBORO, TX

LOCATION.--Lat 33°16'57", long 98°17'53", Jack County, Hydrologic Unit 12030101, near left bank on downstream side of bridge on U.S. Highway 281, 1.7 mi (2.7 km) upstream from Henderson Creek, 8.4 mi (13.5 km) upstream from mouth, and 9.5 mi (15.3 km) northwest of Jacksboro.

DRAINAGE AREA.--21.6 mi² (55.9 km²).

PERIOD OF RECORD.--August 1956 to September 1980 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,016.33 ft (309.78 m) State Department of Highways and Public Transportation datum.

REMARKS.--Records fair. No diversions above station. Five rain gages (two nonrecording and three recording) are operated in the basin. At end of year, flow from 16.3 mi² (42.2 km²) above this station was partly controlled by five floodwater-retarding structures with a total detention capacity of 3,940 acre-ft (4.86 hm³). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--14 years (water years 1957-70) prior to completion of floodwater-retarding structures, 5.75 ft³/s (0.163 m³/s), 3.62 in/yr (92 mm/yr), 4,170 acre-ft/yr (5.14 hm³/yr); 10 years (water years 1971-80) regulated, 1.82 ft³/s (0.052 m³/s), 1.14 in/yr (29 mm/yr), 1,320 acre-ft/yr (1.63 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,990 ft³/s (198 m³/s) Apr. 28, 1957, gage height, 24.45 ft (7.452 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, that of Apr. 18, 1957. Significant floods occurred in April 1915, from information by local resident, and on May 3, 1956, which reached a stage of 21.58 ft (6.578 m), from floodmark, discharge 5,700 ft³/s (161 m³/s), from rating curve.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,320 ft³/s (37.4 m³/s) May 20 at 2015 hours, gage height, 14.61 ft (4.453 m); no flow for many days.

REVISIONS.--The maximum discharges for some years have been revised as shown in the following tables. They supersede figures published in WSP 1632 and 1712, open-file reports, and the reports for 1959-63 and 1970-78.

| Water Year | Date | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| 1959 | June 26 | 2,120 | 60.0 | 14.45 | 4.404 |
| 1960 | Oct. 3 | 3,900 | 110 | 19.65 | 5.989 |
| 1961 | Jan. 7 | 660 | 18.7 | 10.42 | 3.176 |
| | Mar. 17 | 1,750 | 49.6 | 13.89 | 4.234 |
| | July 16 | 2,110 | 59.8 | 15.23 | 4.642 |
| 1962 | Oct. 2 | 460 | 13.0 | 9.57 | 2.917 |
| | June 1 | 520 | 14.7 | 10.27 | 3.130 |
| | 10 | 3,100 | 87.8 | 18.10 | 5.517 |
| | July 16 | 380 | 10.8 | 8.92 | 2.719 |
| | 27 | 800 | 22.7 | 11.13 | 3.392 |
| | Sept. 7 | 710 | 20.1 | 10.67 | 3.252 |
| 1963 | Nov. 26 | 410 | 11.6 | 9.11 | 2.777 |
| | Apr. 28 | 940 | 26.6 | 11.55 | 3.520 |
| 1970 | Apr. 30 | 1,270 | 36.0 | 13.84 | 4.218 |
| 1972 | May 12 | 1,740 | 49.3 | 16.29 | 4.965 |
| 1973 | July 30 | 317 | 8.98 | 8.88 | 2.707 |
| 1974 | Aug. 29 | 487 | 13.8 | 10.22 | 3.115 |
| 1975 | Oct. 30 | 988 | 28.0 | 13.10 | 3.993 |
| 1976 | Sept. 19 | 870 | 24.6 | 12.52 | 3.816 |
| 1977 | May 23 | 1,550 | 43.9 | 15.56 | 4.743 |
| 1978 | Apr. 9 | 1,120 | 31.7 | 13.75 | 4.191 |

Revised daily discharges for water years 1959-63 and 1970-78 in cubic feet per second for high-water periods in these years are given below. They figures supersede those published in WSP 1632 and 1712, open-file reports, and the reports for 1959-63 and 1970-78.

| | |
|---|---|
| June 26, 1959 | 405 |
| Oct. 3 | 1,120 |
| Jan. 7, 1961 | 260 |
| 8 | 56 |
| Mar. 16 | 27 |
| 17 | 370 |
| 18 | 55 |
| July 16 | 356 |
| Oct. 2 | 85 |
| June 1, 1962 | 96 |
| 9 | 136 |
| 10 | 726 |
| July 16 | 41 |
| 27 | 262 |
| Sept. 6 | 162 |
| 7 | 126 |
| 8 | 82 |
| Nov. 28 | 166 |
| Apr. 27, 1963 | 142 |
| 28 | 165 |
| Dec. 29, 1969 | 137 |
| Apr. 25, 1970 | 162 |
| 30 | 303 |
| May 12, 1972 | 326 |
| July 29, 1973 | 50 |
| 30 | 60 |
| Oct. 12 | 73 |
| Apr. 21, 1974 | 42 |
| Aug. 29 | 28 |
| 30 | 50 |
| Oct. 30 | 196 |
| 31 | 230 |
| Nov. 1, 1974 | 172 |
| May 2, 1975 | 136 |
| June 9 | 26 |
| 10 | 172 |
| July 25 | 72 |
| Aug. 30 | 75 |
| Apr. 19, 1976 | 32 |
| Aug. 29 | 19 |
| Sept. 19 | 219 |
| Oct. 29 | 92 |
| Mar. 27, 1977 | 204 |
| May 21 | 42 |
| 22 | 332 |
| Apr. 9, 1978 | 129 |
| 10 | 126 |

08042700 NORTH CREEK NEAR JACKSBORO, TX--Continued

| MONTH | TOTAL | MEAN | MAXIMUM | MINIMUM | CFSM | IN. | ACRE-FEET |
|---|---|---|---|---|---|---|---|
| June 1959........... | 549.40 | 18.3 | 495 | 0 | 0.85 | 0.95 | 1,090 |
| 1959 WTR YR....... | 1,007.40 | 2.76 | 495 | 0 | .13 | 1.73 | 2,000 |
| October 1959........ | 1,215.00 | 39.2 | 1,120 | 0 | 1.82 | 2.09 | 2,410 |
| 1960 WTR YR....... | 1,802.00 | 4.92 | 1,120 | 0 | .228 | 3.10 | 3,570 |
| January 1961........ | 310.00 | 10.0 | 240 | 0 | .463 | .53 | 615 |
| March................ | 474.00 | 15.3 | 370 | 0 | .708 | .82 | 940 |
| July................. | 409.60 | 13.2 | 356 | 0 | .611 | .70 | 812 |
| 1961 WTR YR....... | 1,374.20 | 3.76 | 370 | 0 | .174 | 2.37 | 2,730 |
| October 1961........ | 86.30 | 2.78 | 85 | 0 | .129 | .15 | 171 |
| June................. | 1,027.10 | 34.2 | 724 | 0 | 1.58 | 1.77 | 2,040 |
| July................. | 296.00 | 9.55 | 242 | 0 | .442 | .51 | 587 |
| September........... | 455.50 | 15.2 | 162 | 0 | .704 | .78 | 903 |
| 1962 WTR YR....... | 1,992.20 | 5.46 | 724 | 0 | .25 | 3.43 | 3,950 |
| November 1962....... | 174.40 | 5.82 | 144 | 0 | .27 | .30 | 346 |
| April................ | 319.10 | 10.6 | 165 | 0 | .491 | .55 | 633 |
| 1963 WTR YR....... | 747.50 | 2.04 | 165 | 0 | .094 | 1.28 | 1,480 |
| December 1969....... | 155.48 | 5.02 | 137 | 0 | .23 | .27 | 308 |
| April................ | 584.48 | 19.5 | 383 | 0 | .90 | 1.01 | 1,160 |
| 1970 WTR YR....... | 875.15 | 2.35 | 383 | 0 | .11 | 1.48 | 1,700 |
| May 1972............ | 468.66 | 15.1 | 324 | 0 |  |  | 930 |
| 1972 WTR YR....... | 582.98 | 1.59 | 324 | 0 |  |  | 1,160 |
| July 1973........... | 110.96 | 3.58 | 60 | 0 | .17 | .19 | 220 |
| 1973 WTR YR....... | 168.17 | .46 | 60 | 0 | .02 | .29 | 334 |
| October 1973........ | 110.11 | 3.55 | 73 | 0 | .16 | .19 | 218 |
| April................ | 47.18 | 1.57 | 42 | 0 | .07 | .08 | 94 |
| August............... | 90.9 | 2.93 | 50 | 0 | .14 | .16 | 180 |
| 1974 WTR YR....... | 381.84 | 1.05 | 73 | 0 | .05 | .66 | 757 |
| October 1974........ | 566.89 | 18.3 | 230 | 0 | .86 | .98 | 1,120 |
| November............. | 270.88 | 9.03 | 172 | .02 | .42 | .47 | 537 |
| May.................. | 490.03 | 15.8 | 156 | .28 | .73 | .84 | 972 |
| June................. | 252.61 | 8.42 | 172 | .23 | .39 | .44 | 501 |
| July................. | 97.86 | 3.16 | 72 | .04 | .15 | .17 | 194 |
| August............... | 114.87 | 3.71 | 75 | .04 | .17 | .20 | 228 |
| 1975 WTR YR....... | 1,961.38 | 5.37 | 230 | 0 | .25 | 3.38 | 3,890 |
| April 1976........... | 40.35 | 1.34 | 32 | 0 | .06 | .07 | 80 |
| August............... | 23.2 | .75 | 19 | 0 | .03 | .04 | 46 |
| September........... | 285.93 | 9.52 | 219 | 0 | .44 | .49 | 566 |
| 1976 WTR YR....... | 395.93 | 1.08 | 219 | 0 | .05 | .68 | 785 |
| October 1976........ | 152.39 | 4.92 | 92 | 0 | .23 | .26 | 302 |
| March................ | 394.95 | 12.7 | 206 | .30 | .59 | .68 | 783 |
| May.................. | 498.02 | 16.1 | 332 | .43 | .75 | .86 | 988 |
| 1977 WTR YR....... | 1,247.34 | 3.42 | 332 | 0 | .16 | 2.15 | 2,470 |
| April 1978........... | 326.72 | 10.9 | 129 | .06 | .50 | .56 | 648 |
| 1978 WTR YR....... | 388.34 | 1.06 | 129 | 0 | .05 | .67 | 770 |

## 08042700 NORTH CREEK NEAR JACKSBORO, TX--Continued

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980 MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .00 | .00 | .00 | .00 | .09 | .07 | .29 | .34 | .00 | .00 | .00 |
| 2 | .00 | .00 | .00 | .00 | .00 | .05 | .18 | 3.0 | .37 | .00 | .00 | .00 |
| 3 | .00 | .00 | .00 | .00 | .00 | .13 | .17 | .33 | .31 | .00 | .00 | .00 |
| 4 | .00 | .00 | .00 | .00 | .00 | .21 | .08 | .06 | .15 | .00 | .00 | .00 |
| 5 | .00 | .00 | .00 | .00 | .00 | .19 | .07 | .05 | .06 | .00 | .00 | .00 |
| 6 | .00 | .00 | .00 | .00 | .00 | .15 | .11 | 1.6 | .03 | .00 | .00 | .00 |
| 7 | .00 | .00 | .00 | .00 | .00 | .22 | .11 | 1.1 | .02 | .00 | .00 | .00 |
| 8 | .00 | .00 | .00 | .00 | .72 | .20 | .05 | .35 | .01 | .00 | .00 | .00 |
| 9 | .00 | .00 | .00 | .00 | .41 | .21 | .03 | .18 | .01 | .00 | .00 | .00 |
| 10 | .00 | .00 | .00 | .00 | .21 | .23 | .07 | .05 | .01 | .00 | .00 | .00 |
| 11 | .00 | .00 | .00 | .00 | .15 | .26 | .11 | .02 | .00 | .00 | .00 | .00 |
| 12 | .00 | .00 | .00 | .00 | .10 | .27 | .10 | .02 | .00 | .00 | .00 | .00 |
| 13 | .00 | .00 | .00 | .00 | .07 | .20 | .27 | .00 | .00 | .00 | .00 | .00 |
| 14 | .00 | .00 | .00 | .00 | .06 | .07 | .17 | .00 | .00 | .00 | .00 | .00 |
| 15 | 1.4 | .00 | .00 | .00 | .08 | .06 | .12 | 62 | .00 | .00 | .00 | .00 |
| 16 | .11 | .00 | .00 | .00 | .11 | .11 | .10 | 3.8 | .00 | .00 | .00 | .00 |
| 17 | .00 | .00 | .00 | .00 | .13 | .06 | .06 | .77 | .00 | .00 | .00 | .00 |
| 18 | .00 | .00 | .00 | .00 | .15 | .02 | .06 | .40 | .00 | .00 | .00 | .00 |
| 19 | .00 | .00 | .00 | .00 | .15 | .03 | .09 | .38 | .00 | .00 | .00 | .00 |
| 20 | .00 | .00 | .00 | .00 | .11 | .05 | .07 | 89 | .00 | .00 | .00 | .00 |
| 21 | .00 | .00 | .00 | .67 | .10 | .02 | .07 | 7.4 | .00 | .00 | .00 | .00 |
| 22 | .00 | .00 | .00 | .76 | .08 | .03 | .05 | 1.1 | .00 | .00 | .00 | .00 |
| 23 | .00 | .00 | .00 | .11 | .07 | .06 | .03 | .62 | .00 | .00 | .00 | .00 |
| 24 | .00 | .00 | .00 | .00 | .07 | .04 | .07 | .59 | .00 | .00 | .00 | .00 |
| 25 | .00 | .00 | .00 | .00 | .08 | .03 | .14 | .59 | .00 | .00 | .00 | .00 |
| 26 | .00 | .00 | .00 | .00 | .07 | .06 | .21 | .53 | .00 | .00 | .00 | .00 |
| 27 | .00 | .00 | .00 | .00 | .13 | .21 | .06 | .57 | .00 | .00 | .00 | 4.1 |
| 28 | .00 | .00 | .90 | .00 | .16 | .39 | .00 | 1.3 | .00 | .00 | .00 | 122 |
| 29 | .00 | .00 | .33 | .00 | .17 | .15 | .00 | .68 | .00 | .00 | .00 | 25 |
| 30 | .00 | .00 | .00 | .00 | --- | .11 | .00 | .55 | .00 | .00 | .00 | 7.2 |
| 31 | .00 | --- | .00 | .00 | --- | .07 | --- | .40 | --- | .00 | .00 | --- |
| TOTAL | 1.51 | .00 | 1.23 | 1.54 | 3.38 | 3.98 | 2.72 | 177.73 | 1.31 | .00 | .00 | 158.30 |
| MEAN | .049 | .000 | .040 | .050 | .12 | .13 | .091 | 5.73 | .044 | .000 | .000 | 5.28 |
| MAX | 1.4 | .00 | .90 | .76 | .72 | .39 | .27 | 89 | .37 | .00 | .00 | 122 |
| MIN | .00 | .00 | .00 | .00 | .00 | .02 | .00 | .00 | .00 | .00 | .00 | .00 |
| CFSM | .002 | .000 | .002 | .002 | .006 | .006 | .004 | .27 | .002 | .000 | .000 | .26 |
| IN. | .00 | .00 | .00 | .00 | .01 | .01 | .00 | .31 | .00 | .00 | .00 | .27 |
| AC-FT | 3.0 | .00 | 2.4 | 3.1 | 6.7 | 7.9 | 5.4 | 353 | 2.6 | .00 | .00 | 314 |

CAL YR 1979 TOTAL 175.32 MEAN .48 MAX 35 MIN .00 CFSM .02 IN .30 AC-FT 348
WTR YR 1980 TOTAL 351.70 MEAN .96 MAX 122 MIN .00 CFSM .04 IN .61 AC-FT 698

## 08042800 WEST FORK TRINITY RIVER NEAR JACKSBORO, TX

**LOCATION.**--Lat 33°17'36", long 98°04'43", Jack County, Hydrologic Unit 12030101, near left bank on downstream side of bridge on State Highway 59, 4 mi (6 km) downstream from Big Cleveland Creek, 7 mi (11 km) upstream from Carroll Creek, 7 mi (11 km) northeast of Jacksboro, and at mile 660 (1,060 km).

**DRAINAGE AREA.**--683 mi² (1,769 km²).

**PERIOD OF RECORD.**--March 1956 to current year.
Water-quality records: October 1976 to September 1978.

**GAGE.**--Water-stage recorder. Datum of gage is 869.28 ft (264.96 m) State Department of Highways and Public Transportation datum. Sept. 20, 1960, to May 30, 1961, nonrecording gage at same site and datum.

**REMARKS.**--Records good. At end of year, flow from 70.9 mi² (183.6 km²) above this station was partly controlled by 21 floodwater-retarding structures with a combined detention capacity of 19,780 acre-ft (24.4 hm³). Tarrant County Water Control and Improvement District gage-height telemeter located at station.

**AVERAGE DISCHARGE.**--24 years (water years 1957-80), 91.4 ft³/s (2.588 m³/s), 1.82 in/yr (46 mm/yr), 66,220 acre-ft/yr (81.6 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 35,100 ft³/s (994 m³/s) Apr. 27, 1957, gage height, 32.10 ft (9.784 m), from floodmark; no flow at times each year.
Maximum stage since at least 1900, that of Apr. 27, 1957.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood in June 1941 reached a stage of 30 ft (9.1 m), from information by local residents.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 2,630 ft³/s (74.5 m³/s) Sept. 30 at 0215 hours, gage height, 19.98 ft (6.090 m), no other peak above base of 1,200 ft³/s (34.0 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .00 | .00 | 10 | 1.2 | .17 | .00 | .00 | 556 | .00 | .00 | .00 |
| 2 | .00 | .00 | .00 | 14 | .90 | .14 | .00 | .00 | 243 | .00 | .00 | .00 |
| 3 | .00 | .00 | .00 | 6.7 | .62 | .11 | .00 | .00 | 18 | .00 | .00 | .00 |
| 4 | .00 | .00 | .00 | 3.7 | .51 | .10 | .00 | .00 | 7.6 | .00 | .00 | .00 |
| 5 | .00 | .00 | .00 | 2.3 | .42 | .07 | .00 | .00 | 4.1 | .00 | .00 | .00 |
| 6 | .00 | .00 | .00 | 1.4 | .33 | .05 | .00 | 18 | 2.6 | .00 | .00 | .00 |
| 7 | .00 | .00 | .00 | .94 | .33 | .04 | .00 | 60 | 1.6 | .00 | .00 | .00 |
| 8 | .00 | .00 | .00 | .82 | 3.7 | .03 | .00 | 166 | 1.2 | .00 | .00 | .00 |
| 9 | .00 | .00 | .00 | .73 | 5.9 | .02 | .00 | 71 | .97 | .00 | .00 | .00 |
| 10 | .00 | .00 | .00 | .55 | 6.3 | .01 | .00 | 42 | .79 | .00 | .00 | .00 |
| 11 | .00 | .00 | .00 | .38 | 9.7 | .01 | .00 | 31 | .64 | .00 | .00 | .00 |
| 12 | .00 | .00 | .00 | .28 | 23 | .01 | .00 | 16 | .52 | .00 | .00 | .00 |
| 13 | .00 | .00 | .00 | .20 | 26 | .00 | .00 | 7.6 | .41 | .00 | .00 | .00 |
| 14 | .00 | .00 | .00 | .16 | 13 | .00 | .00 | 4.6 | .36 | .00 | .00 | .00 |
| 15 | .00 | .00 | .00 | .05 | 8.6 | .00 | .00 | 47 | .32 | .00 | .00 | .00 |
| 16 | .00 | .00 | .00 | .04 | 6.7 | .00 | .00 | 683 | .46 | .00 | .00 | .00 |
| 17 | .00 | .00 | .00 | .03 | 5.8 | .00 | .00 | 880 | .39 | .00 | .00 | .00 |
| 18 | .00 | .00 | .00 | .02 | 5.5 | .00 | .00 | 1000 | .33 | .00 | .00 | .00 |
| 19 | .00 | .00 | .00 | .02 | 4.9 | .00 | .00 | 630 | .23 | .00 | .00 | .00 |
| 20 | .00 | .00 | .00 | .03 | 3.7 | .00 | .00 | 76 | .16 | .00 | .00 | .00 |
| 21 | .00 | .00 | .00 | .27 | 3.0 | .00 | .00 | 261 | .08 | .00 | .00 | .00 |
| 22 | .00 | .00 | .00 | 3.0 | 2.4 | .00 | .00 | 509 | .03 | .00 | .00 | .00 |
| 23 | .00 | .00 | .00 | 2.2 | 1.6 | .00 | .00 | 310 | .01 | .00 | .00 | .00 |
| 24 | .00 | .00 | .00 | 1.1 | .90 | .00 | .00 | 123 | .00 | .00 | .00 | .00 |
| 25 | .00 | .00 | .00 | .65 | .72 | .00 | .00 | 32 | .00 | .00 | .00 | .00 |
| 26 | .00 | .00 | .00 | 2.6 | .36 | .00 | .00 | 13 | .00 | .00 | .00 | .00 |
| 27 | .00 | .00 | .00 | 4.7 | .34 | .00 | .00 | 5.0 | .00 | .00 | .00 | .00 |
| 28 | .00 | .00 | .00 | 4.0 | .27 | .00 | .00 | 5.5 | .00 | .00 | .00 | 367 |
| 29 | .00 | .00 | .00 | 2.9 | .21 | .00 | .00 | 111 | .00 | .00 | .00 | 1670 |
| 30 | .00 | .00 | .00 | 1.9 | --- | .00 | .00 | 370 | .00 | .00 | .00 | 2200 |
| 31 | .00 | --- | .00 | 1.3 | --- | .00 | --- | 461 | --- | .00 | .00 | --- |
| TOTAL | .00 | .00 | .00 | 66.97 | 134.91 | .76 | .00 | 6097.30 | 843.00 | .00 | .00 | 4237.00 |
| MEAN | .000 | .000 | .000 | 2.16 | 4.65 | .025 | .000 | 197 | 28.1 | .000 | .000 | 141 |
| MAX | .00 | .00 | .00 | 14 | 26 | .17 | .00 | 1000 | 556 | .00 | .00 | 2200 |
| MIN | .00 | .00 | .00 | .02 | .21 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| CFSM | .0000 | .0000 | .0000 | .0032 | .0067 | .0000 | .0000 | .29 | .04 | .0000 | .0000 | .21 |
| IN. | .00 | .00 | .00 | .00 | .01 | .00 | .00 | .33 | .05 | .00 | .00 | .23 |
| AC-FT | .00 | .00 | .00 | 133 | 268 | 1.5 | .00 | 12090 | 1670 | .00 | .00 | 8400 |

CAL YR 1979 TOTAL 10372.20 MEAN 28.4 MAX 833 MIN .00 CFSM .04 IN .56 AC-FT 20570
WTR YR 1980 TOTAL 11387.14 MEAN 31.1 MAX 2200 MIN .00 CFSM .05 IN .62 AC-FT 22590

## 08043000 BRIDGEPORT RESERVOIR ABOVE BRIDGEPORT, TX

LOCATION.--Lat 33°13'22", long 97°49'54", Wise County, Hydrologic Unit 12030101, at left end of Bridgeport Dam on West Fork Trinity River, 4.6 mi (7.4 km) west of Bridgeport, 13 mi (21 km) upstream from Big Sandy Creek, and at mile 626 (1,007 km).

DRAINAGE AREA.--1,111 mi² (2,877 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1932 to current year (prior to October 1950, monthend figures only).

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Jan. 26, 1944, nonrecording gages at various sites in vicinity of present gage at present datum.

REMARKS.--The reservoir is formed by a rolled earthfill dam 2,040 ft (622 m) long. The dam was completed in December 1931 and storage began Apr. 1, 1932. The original dam was 1,900 ft (580 m) long, but was lengthened to the present length (2,040 ft or 622 m) in 1971-72. The original service spillway was eliminated during construction (1971-72), and a new spillway with approach and discharge channels was built through natural ground 2,800 ft (850 m) from the left end of dam. The new spillway is 90 ft (27 m) wide and has eight vertical lift gates that are 11.25 by 22 ft (3.43 by 7 m). The controlled outlet works consist of a 48-inch-diameter (1,219 mm) and an 18-inch-diameter (457 mm) pipe encased in a concrete conduit extending through the dam. In addition, a controlled 60-inch-diameter (1,524 mm) steel pipe extends through the service spillway wall to the spillway discharge basin. Flow is affected at times by discharge from the flood-detention pools of 25 flood-water-retarding structures with a combined detention capacity of 21,720 acre-ft (26.8 hm³). These structures control runoff from 80.3 mi² (208.0 km²) above the reservoir. For elevations of outlet works, see table below. Capacity tables are based on surveys made in 1956 and 1968. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 874.0 | - |
| Crest of spillway | 866.0 | 902,000 |
| Top of gates | 842.0 | 469,300 |
| Top of conservation pool | 836.0 | 387,000 |
| Crest of spillway | 820.0 | 212,400 |
| Lowest gated outlet (invert, at spillway) | 810.0 | 133,200 |
| Lowest gated outlet (invert) | 751.4 | 0 |

COOPERATION.--Daily elevation and monthly diversion records furnished by Tarrant County Water Control and Improvement District No. 1. Capacity table furnished by Freese and Nichols, Consulting Engineers, for Tarrant County Water Control and Improvement District No. 1.

EXTREMES (at 0730) FOR PERIOD OF RECORD.--Maximum contents observed, 407,600 acre-ft (503 hm³) Apr. 29, 30, 1942, elevation, 836.2 ft (254.87 m); maximum elevation, 836.55 ft (254.980 m) May 27, 1977; minimum contents since first appreciable storage in 1935, 7,170 acre-ft (8.84 hm³) Oct. 12-16, 1956.

EXTREMES (at 0730) FOR CURRENT YEAR.--Maximum contents observed, 168,000 acre-ft (207 hm³) Oct. 1, elevation, 814.73 ft (248.330 m); minimum observed, 79,130 acre-ft (97.6 hm³) Sept. 25, 26, elevation, 801.01 ft (244.148 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 801.0 | 79,100 | 809.0 | 126,400 |
| 803.0 | 89,780 | 811.0 | 140,200 |
| 805.0 | 101,200 | 815.0 | 170,200 |
| 807.0 | 113,400 | | |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 0730

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 168000 | 150000 | 145700 | 142900 | 136200 | 134400 | 122700 | 112800 | 116100 | 94940 | 86230 | 81860 |
| 2 | 167600 | 150200 | 145700 | 142700 | 135900 | 134300 | 122100 | 112700 | 116400 | 94730 | 86120 | 81700 |
| 3 | 166700 | 149700 | 145600 | 142600 | 135700 | 134100 | 121800 | 112900 | 116800 | 93300 | 85850 | 81600 |
| 4 | 166000 | 149100 | 145500 | 142100 | 135500 | 134100 | 121600 | 112500 | 116500 | 92660 | 85690 | 81540 |
| 5 | 165400 | 148500 | 145500 | 141900 | 135200 | 133900 | 121700 | 112000 | 113600 | 91670 | 85470 | 81440 |
| 6 | 164800 | 147900 | 145500 | 141700 | 135100 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | 164400 | 147600 | 145300 | 141400 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | 163900 | [illegible] | 145200 | 141200 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | 147200 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | 161700 | 147100 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | --- | [illegible] | [illegible] | --- | [illegible] | --- | [illegible] | --- | [illegible] | [illegible] | --- |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

[illegible]

[illegible]

## 08043000 BRIDGEPORT RESERVOIR ABOVE BRIDGEPORT, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 09... | 1120 | 380 | 8.5 | 140 | 12 | 42 | 7.3 | 22 | .8 |

| DATE | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | |
| 09... | 5.4 | 150 | 0 | 23 | 36 | .3 | 5.9 | 216 |

## 08044000 BIG SANDY CREEK NEAR BRIDGEPORT, TX

LOCATION.--Lat 33°13'54", long 97°41'40", Wise County, Hydrologic Unit 12030101, on downstream side of bridge on U.S. Highway 380, 1.9 mi (3.1 km) upstream from Greathouse Branch, 4.0 mi (6.4 km) east of Bridgeport, and 4.4 mi (7.1 km) upstream from mouth.

DRAINAGE AREA.--333 mi² (862 km²).

PERIOD OF RECORD.--October 1936 to current year.

REVISED RECORDS.--WSP 1148: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 727.44 ft (221.724 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Since May 1, 1956, flow from 100 mi² (259 km²) above station is affected at times by storage in Lake Amon G. Carter 30 mi (48 km) upstream, capacity 15,240 acre-ft (18.8 hm³) at elevation 920.0 ft (280.42 m), spillway crest. Records furnished by city of Bowie show that during the current year 1,070 acre-ft (1.32 hm³) was diverted from Lake Amon G. Carter for municipal use and 67 acre-ft (82,600 m³) of sewage effluent was discharged into tributaries above station. Flow was also affected at times by discharge from 15 flood-detention pools of floodwater-retarding structures with a combined capacity of 9,750 acre-ft (12.0 hm³). These structures control runoff from 38.8 mi² (100.5 km²) between this station and Lake Amon G. Carter. Tarrant County Water Control and Improvement District No. 1 operates a gage-height telemeter at this station.

AVERAGE DISCHARGE.--44 years, 69.2 ft³/s (1.960 m³/s), 50,140 acre-ft/yr (61.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,000 ft³/s (1,500 m³/s) June 10, 1941, gage height, 15.69 ft (4.782 m), from floodmark, from rating curve extended above 22,000 ft³/s (623 m³/s); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1887 occurred in 1908 and 1915 and reached about the same stage as that of June 10, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 422 ft³/s (12.0 m³/s) Sept. 29 at 1600 hours, gage height, 5.97 ft (1.820 m); no flow Oct. 1 to Jan. 1, May 4 to Sept. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .00 | .00 | .00 | .94 | 2.2 | 1.2 | .03 | .00 | .00 | .00 | .00 |
| 2 | .00 | .00 | .00 | .23 | .94 | 1.9 | .94 | .01 | .00 | .00 | .00 | .00 |
| 3 | .00 | .00 | .00 | .24 | .94 | 1.9 | .83 | .01 | .00 | .00 | .00 | .00 |
| 4 | .00 | .00 | .00 | .15 | 1.2 | 2.0 | 2.6 | .00 | .00 | .00 | .00 | .00 |
| 5 | .00 | .00 | .00 | .15 | 1.2 | 2.1 | 2.2 | .00 | .00 | .00 | .00 | .00 |
| 6 | .00 | .00 | .00 | .20 | 1.2 | 2.2 | 1.2 | .00 | .00 | .00 | .00 | .00 |
| 7 | .00 | .00 | .00 | .19 | 1.0 | 2.1 | .83 | .00 | .00 | .00 | .00 | .00 |
| 8 | .00 | .00 | .00 | .22 | 1.9 | 2.2 | .58 | .00 | .00 | .00 | .00 | .00 |
| 9 | .00 | .00 | .00 | .30 | 4.6 | 2.2 | .50 | .00 | .00 | .00 | .00 | .00 |
| 10 | .00 | .00 | .00 | .30 | 6.2 | 2.3 | .43 | .00 | .00 | .00 | .00 | .00 |
| 11 | .00 | .00 | .00 | .36 | 5.3 | 2.4 | .30 | .00 | .00 | .00 | .00 | .00 |
| 12 | .00 | .00 | .00 | .43 | 4.2 | 2.5 | .30 | .00 | .00 | .00 | .00 | .00 |
| 13 | .00 | .00 | .00 | .50 | 4.2 | 2.5 | .67 | .00 | .00 | .00 | .00 | .00 |
| 14 | .00 | .00 | .00 | .50 | 4.4 | 2.5 | 1.3 | .00 | .00 | .00 | .00 | .00 |
| 15 | .00 | .00 | .00 | .50 | 3.8 | 2.2 | 1.8 | .00 | .00 | .00 | .00 | .00 |
| 16 | .00 | .00 | .00 | .58 | 3.4 | 2.3 | 1.2 | .00 | .00 | .00 | .00 | .00 |
| 17 | .00 | .00 | .00 | .67 | 3.1 | 2.4 | .76 | .00 | .00 | .00 | .00 | .00 |
| 18 | .00 | .00 | .00 | .67 | 2.9 | 2.6 | .56 | .00 | .00 | .00 | .00 | .00 |
| 19 | .00 | .00 | .00 | .67 | 2.9 | 2.3 | .50 | .00 | .00 | .00 | .00 | .00 |
| 20 | .00 | .00 | .00 | .67 | 2.9 | 2.2 | .36 | .00 | .00 | .00 | .00 | .00 |
| 21 | .00 | .00 | .00 | 1.3 | 2.7 | 2.1 | .30 | .00 | .00 | .00 | .00 | .00 |
| 22 | .00 | .00 | .00 | 2.2 | 2.5 | 2.1 | .25 | .00 | .00 | .00 | .00 | .00 |
| 23 | .00 | .00 | .00 | 2.1 | 2.3 | 2.1 | .16 | .00 | .00 | .00 | .00 | .00 |
| 24 | .00 | .00 | .00 | 1.3 | 2.2 | 1.8 | .20 | .00 | .00 | .00 | .00 | .00 |
| 25 | .00 | .00 | .00 | 1.0 | 2.0 | 1.6 | .16 | .00 | .00 | .00 | .00 | .00 |
| 26 | .00 | .00 | .00 | .94 | 1.6 | 1.3 | .05 | .00 | .00 | .00 | .00 | .00 |
| 27 | .00 | .00 | .00 | .76 | 1.7 | 1.0 | .05 | .00 | .00 | .00 | .00 | .00 |
| 28 | .00 | .00 | .00 | .76 | 1.8 | 1.4 | .23 | .00 | .00 | .00 | .00 | 53 |
| 29 | .00 | .00 | .00 | .76 | 2.1 | 1.6 | .12 | .00 | .00 | .00 | .00 | 376 |
| 30 | .00 | .00 | .00 | .94 | --- | 1.6 | .05 | .00 | .00 | .00 | .00 | 227 |
| 31 | .00 | --- | .00 | .94 | --- | 1.4 | --- | .00 | --- | .00 | .00 | --- |
| TOTAL | .00 | .00 | .00 | 20.53 | 76.32 | 62.8 | 20.71 | .05 | .00 | .00 | .00 | 656.00 |
| MEAN | .000 | .000 | .000 | .66 | 2.63 | 2.03 | .69 | .002 | .000 | .000 | .000 | 21.9 |
| MAX | .00 | .00 | .00 | 2.2 | 6.2 | 2.6 | 2.6 | .03 | .00 | .00 | .00 | 376 |
| MIN | .00 | .00 | .00 | .00 | .94 | 1.0 | .05 | .00 | .00 | .00 | .00 | .00 |
| AC-FT | .00 | .00 | .00 | 41 | 151 | 125 | 41 | .10 | .00 | .00 | .00 | 1300 |

CAL YR 1979 TOTAL 15420.86 MEAN 42.2 MAX 2300 MIN .00 AC-FT 30600
WTR YR 1980 TOTAL 836.41 MEAN 2.29 MAX 376 MIN .00 AC-FT 1660

## 08044500 WEST FORK TRINITY RIVER NEAR BOYD, TX

LOCATION.--Lat 33°05'07", long 97°33'30", Wise County, Hydrologic Unit 12030101, on right bank at downstream side of highway embankment, 10 ft (3 m) right of right abutment of bridge on Farm Road 730, 0.6 mi (1.0 km) northeast of Boyd, 3.5 mi (5.6 km) downstream from Boggy Creek, and at mile 602 (969 km).

DRAINAGE AREA.--1,725 mi² (4,468 km²).

PERIOD OF RECORD.--January 1947 to current year.

GAGE.--Water-stage recorder. Datum of gage is 660.57 ft (201.342 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 14, 1954, water-stage recorder at site 2.2 mi (3.5 km) downstream at datum 5.48 ft (1.670 m) lower.

REMARKS.--Records fair. During the current year, sustained flows were the result of releases for water supply from Bridgeport Reservoir (station 08043000) 25 mi (40 km) upstream from this station, drainage area 1,111 mi² (2,877 km²). In addition, flow from 100 mi² (259 km²) is affected by storage in Lake Amon G. Carter, capacity 15,260 acre-ft (18.8 hm³), on Big Sandy Creek. Flow is also affected at times by 32 floodwater-detention structures with a combined detention capacity of 22,780 acre-ft (28.1 hm³). These structures control runoff from 84.1 mi² (217.8 km²) in the Big Sandy and Salt Creeks drainage basins. Several observations of water temperature were made during the year. Tarrant County Water Control and Improvement District No. 1 gage-height telemeter at station.

AVERAGE DISCHARGE.--33 years, 212 ft³/s (6.004 m³/s), 153,600 acre-ft/yr (189 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,300 ft³/s (773 m³/s) Oct. 5, 1959, gage height, 22.17 ft (6.757 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, about 25 ft (7.6 m) in May 1908, present site and datum, from information by local residents, who also reported a flood of about the same gage height between 1870-80. A flood in April 1942 reached a stage of 20.6 ft (6.28 m), present site and datum, from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,160 ft³/s (32.9 m³/s) Sept. 30 at 0100 hours, gage height, 15.08 ft (4.596 m); no flow Aug. 3 to Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 216 | 230 | 3.0 | 119 | 120 | 6.2 | 232 | 141 | 275 | 307 | .62 | .00 |
| 2 | 217 | 229 | 3.0 | 119 | 120 | 5.9 | 231 | 143 | 275 | 307 | .16 | .00 |
| 3 | 218 | 227 | 3.1 | 119 | 121 | 5.8 | 230 | 65 | 275 | 307 | .00 | .00 |
| 4 | 219 | 225 | 3.5 | 118 | 121 | 5.8 | 164 | 73 | 275 | 306 | .00 | .00 |
| 5 | 220 | 226 | 3.6 | 118 | 121 | 6.0 | 63 | 130 | 303 | 305 | .00 | .00 |
| 6 | 223 | 227 | 3.5 | 118 | 121 | 7.3 | 15 | 131 | 333 | 304 | .00 | .00 |
| 7 | 221 | 225 | 12 | 118 | 121 | 7.0 | 85 | 100 | 334 | 303 | .00 | .00 |
| 8 | 223 | 231 | 6.3 | 118 | 195 | 6.6 | 131 | 17 | 334 | 302 | .00 | .00 |
| 9 | 222 | 140 | 4.6 | 118 | 217 | 6.3 | 130 | 7.3 | 334 | 102 | .00 | .00 |
| 10 | 229 | 15 | 4.2 | 118 | 144 | 6.2 | 129 | 6.3 | 334 | 13 | .00 | .00 |
| 11 | 229 | 6.6 | 4.1 | 120 | 138 | 6.2 | 140 | 5.2 | 335 | 3.0 | .00 | .00 |
| 12 | 226 | 5.3 | 7.4 | 118 | 98 | 6.3 | 142 | 4.6 | 347 | 3.4 | .00 | .00 |
| 13 | 224 | 4.6 | 12 | 118 | 24 | 6.3 | 140 | 11 | 363 | 3.0 | .00 | .00 |
| 14 | 225 | 4.3 | 9.3 | 118 | 16 | 6.3 | 70 | 127 | 363 | 2.6 | .00 | .00 |
| 15 | 229 | 4.0 | 8.0 | 119 | 13 | 6.2 | 12 | 112 | 363 | 2.1 | .00 | .00 |
| 16 | 241 | 3.8 | 5.9 | 120 | 12 | 6.2 | 80 | 10 | 363 | 1.6 | .00 | .00 |
| 17 | 231 | 3.5 | 4.7 | 120 | 11 | 6.2 | 139 | 8.6 | 364 | 1.6 | .00 | .00 |
| 18 | 230 | 3.5 | 4.6 | 120 | 10 | 320 | 140 | 7.6 | 364 | 1.6 | .00 | .00 |
| 19 | 230 | 3.4 | 4.2 | 120 | 9.8 | 440 | 140 | 7.2 | 363 | 1.7 | .00 | .00 |
| 20 | 232 | 3.2 | 4.2 | 120 | 9.1 | 413 | 140 | 27 | 364 | 2.0 | .00 | .00 |
| 21 | 231 | 3.7 | 4.5 | 125 | 8.6 | 413 | 141 | 267 | 352 | .30 | .00 | .00 |
| 22 | 232 | 4.6 | 4.7 | 157 | 7.9 | 417 | 141 | 274 | 330 | .27 | .00 | .00 |
| 23 | 234 | 16 | 31 | 148 | 7.6 | 422 | 141 | 270 | 349 | .22 | .00 | .00 |
| 24 | 232 | 3.6 | 108 | 124 | 7.0 | 425 | 142 | 271 | 336 | .19 | .00 | .00 |
| 25 | 228 | 4.3 | 160 | 124 | 6.9 | 421 | 143 | 273 | 313 | .16 | .00 | .00 |
| 26 | 225 | 4.1 | 160 | 122 | 6.4 | 423 | 142 | 273 | 308 | .35 | .00 | .00 |
| 27 | 227 | 3.9 | 170 | 120 | 6.2 | 383 | 142 | 273 | 307 | .30 | .00 | .00 |
| 28 | 229 | 3.5 | 181 | 119 | 6.2 | 244 | 142 | 273 | 307 | .46 | .00 | 49 |
| 29 | 230 | 3.3 | 167 | 120 | 6.3 | 233 | 141 | 273 | 307 | 1.9 | .00 | 900 |
| 30 | 207 | 3.3 | 124 | 121 | --- | 232 | 141 | 273 | 307 | .37 | .00 | 900 |
| 31 | 201 | --- | 122 | 121 | --- | 230 | --- | 273 | --- | .36 | .00 | --- |
| TOTAL | 7130 | 2077.2 | 1404.1 | 3779 | 1804.9 | [illegible] | 4000 | 4147.8 | 9743 | [illegible] | .78 | [illegible] |
| MEAN | 230 | 69.2 | 45.3 | 122 | 62.2 | 291 | 133 | 134 | 325 | [illegible] | .025 | 61.6 |
| MAX | 241 | 231 | 181 | 157 | 217 | 440 | 232 | 274 | 364 | 307 | .62 | 900 |
| MIN | 201 | 3.2 | 3.0 | 118 | 6.2 | 5.8 | 12 | 4.6 | 275 | .16 | .00 | .00 |
| AC-FT | 14140 | 4120 | 2780 | 7500 | 3580 | 17900 | 7930 | 8230 | 19330 | [illegible] | 1.5 | [illegible] |

CAL YR 1979 TOTAL 84081.10 MEAN [illegible] MAX 2670 MIN 3.0 AC-FT 167000
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX 900 MIN .00 AC-FT [illegible]

## [illegible] EAGLE MOUNTAIN RESERVOIR ABOVE FORT WORTH, TX

**LOCATION.**--[illegible] Tarrant County, [illegible] Eagle Mountain Dam on West Fork Trinity River, [illegible] Fort Worth, [illegible]

**DRAINAGE AREA.**--1,970 mi² (5,102 km²).

**PERIOD OF RECORD.**--February 1934 to current year [illegible]

**REVISED RECORDS.**--[illegible] Drainage area.

**GAGE.**--[illegible] gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929. [illegible]

**REMARKS.**--The reservoir is formed by [illegible]

| | [illegible] | [illegible] |
|---|---|---|
| Top of dam | [illegible] | [illegible] |
| Crest of spillway | [illegible] | [illegible] |
| Top of gates [illegible] | [illegible] | [illegible] |
| Crest of [illegible] spillway [illegible] | [illegible] | [illegible] |
| Crest of spillway [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] |

**COOPERATION.**--Daily elevations and monthly diversion records furnished by Tarrant County Water Control and Improvement District No. 1. [illegible]

**EXTREMES FOR PERIOD OF RECORD.**--[illegible]

**EXTREMES FOR CURRENT YEAR.**--[illegible]

Capacity table (elevation, in feet, and total contents, in acre-feet)

[illegible]

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER [illegible] TO SEPTEMBER [illegible]
INSTANTANEOUS OBSERVATIONS AT [illegible]

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | | [illegible] | [illegible] | | [illegible] | | [illegible] | | [illegible] | [illegible] | |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

[illegible]

[illegible]

a Elevation, in feet, at end of month.
b Change in contents, in acre-feet.
c Diversions, in acre-feet, for municipal and industrial use.

## 08045400 LAKE WORTH ABOVE FORT WORTH, TX

PERIOD OF RECORD.--Chemical analyses: January 1970 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| SEP | | | | | | | | | |
| 08... | 0900 | 418 | 22.0 | 130 | 17 | 38 | 9.0 | 30 | 1.1 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| SEP | | | | | | | | |
| 08... | 6.8 | 140 | 0 | 27 | 43 | .3 | 5.5 | 229 |

## 08045800 LAKE WEATHERFORD NEAR WEATHERFORD, TX

**LOCATION.**--Lat 32°46'21", long 97°40'28", Parker County, Hydrologic Unit 12030102, in pumphouse 168 ft (51 m) upstream from right end of dam on Clear Fork Trinity River, 2.4 mi (3.9 km) downstream from Hays Branch, 3.9 mi (6.3 km) upstream from Squaw Creek, and 7.3 mi (11.7 km) east of Weatherford.

**DRAINAGE AREA.**--109 mi² (282 km²).

**PERIOD OF RECORD.**--June 1976 to May 1980 (discontinued).
Water-quality records: Chemical analyses: October 1978 to September 1979.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

**REMARKS.**--The lake is formed by a rolled earthfilled dam 4,055 ft (1,236 m) long. The dam was completed and deliberate impoundment began in March 1957. The service spillway is a semi-circular drop inlet with a crest length of 162 ft (49 m) located 550 ft (168 m) to the right of the pumphouse. The drop inlet discharges into a 9- by 9-foot (3 by 3 m) concrete conduit that extends 425 ft (130 m) under the dam. The emergency spillway is an uncontrolled excavated split-level cut channel located at the right end of dam. The low-flow outlet works consist of an 18-inch-diameter (457 mm) concrete pipe with a valve control assembly. At end of year, flow from 43.9 mi² (113.7 km²) above this station was partly affected at times by discharge from the flood-detention pools of 22 floodwater-retarding structures with a combined detention capacity of 11,000 acre-ft (13.6 hm³). Records furnished by the city of Weatherford show that 1,030 acre-ft (1.27 hm³) was diverted from the lake for municipal use during the period October to April and 869 acre-ft (1.07 hm³) of sewage effluent was returned to a tributary downstream from station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 914.0 | - |
| Crest of spillway | 903.0 | 28,530 |
| Invert of drop inlet (spillway) | 896.0 | 19,070 |
| Invert of lowest gated outlet pipe | 857.0 | 88 |

**COOPERATION.**--Records of diversions were furnished by the city of Weatherford. The capacity table is based on an April 1973 report by the Soil Conservation Service.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 23,560 acre-ft (29.0 hm³) Mar. 27, 1977, elevation, 899.65 ft (274.213 m), from high-water mark; minimum, 12,880 acre-ft (15.9 hm³) Jan. 9, 10, 1979, elevation, 889.99 ft (271.269 m).

**EXTREMES FOR CURRENT YEAR.**--Maximum contents during period October to May, 18,920 acre-ft (23.3 hm³) May 6, elevation, 895.87 ft (273.061 hm³); minimum, 17,350 acre-ft (21.4 hm³) Dec. 10-12, elevation, 894.44 ft (272.625 m).

Capacity table (elevation, in feet, and total contents, in acre-ft)

| | |
|---|---|
| 894.0 | 16,890 |
| 895.0 | 17,960 |
| 896.0 | 19,070 |

CONTENTS, IN ACRE-FEET, OCTOBER 1979 TO MAY 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18140 | 17860 | 17470 | 17700 | 18070 | 18410 | 18330 | 18640 | | | | |
| 2 | 18100 | 17850 | 17460 | 17700 | 18070 | 18390 | 18460 | 18820 | | | | |
| 3 | 18070 | 17830 | 17450 | 17680 | 18070 | 18360 | 18590 | 18830 | | | | |
| 4 | 18020 | 17800 | 17440 | 17670 | 18070 | 18390 | 18590 | 18840 | | | | |
| 5 | 17980 | 17800 | 17440 | 17650 | 18080 | 18360 | 18570 | 18840 | | | | |
| 6 | 17960 | 17760 | 17420 | 17650 | 18070 | 18360 | 18570 | 18910 | | | | |
| 7 | 17930 | 17750 | 17420 | 17630 | 18060 | 18360 | 18560 | 18910 | | | | |
| 8 | 17890 | 17740 | 17400 | 17620 | 18220 | 18350 | 18550 | --- | | | | |
| 9 | 17850 | 17740 | 17400 | 17620 | 18320 | 18350 | 18540 | --- | | | | |
| 10 | 17820 | 17720 | 17390 | 17610 | 18340 | 18350 | 18510 | --- | | | | |
| 11 | 17810 | 17710 | 17400 | 17610 | 18380 | 18350 | 18540 | --- | | | | |
| 12 | 17760 | 17700 | 17510 | 17600 | 18390 | 18410 | 18550 | --- | | | | |
| 13 | 17730 | 17690 | 17500 | 17600 | 18400 | 18340 | 18600 | --- | | | | |
| 14 | 17700 | 17680 | 17500 | 17620 | 18410 | 18320 | 18600 | --- | | | | |
| 15 | 17890 | 17670 | 17490 | 17610 | 18440 | 18310 | 18600 | --- | | | | |
| 16 | 17900 | 17650 | 17490 | 17600 | 18430 | 18330 | 18600 | --- | | | | |
| 17 | 17890 | 17640 | 17470 | 17590 | 18430 | 18310 | 18590 | --- | | | | |
| 18 | 17870 | 17640 | 17460 | 17580 | 18430 | 18290 | 18570 | --- | | | | |
| 19 | 17860 | 17630 | 17460 | 17590 | 18440 | 18280 | 18570 | --- | | | | |
| 20 | 17850 | 17640 | 17460 | 17780 | 18450 | 18280 | 18570 | --- | | | | |
| 21 | 17870 | 17670 | 17490 | 17900 | 18450 | 18270 | 18560 | --- | | | | |
| 22 | 17830 | 17620 | 17490 | 17970 | 18460 | 18230 | 18540 | --- | | | | |
| 23 | 17820 | 17600 | 17620 | 18050 | 18450 | 18280 | 18530 | --- | | | | |
| 24 | 17800 | 17590 | 17620 | 18090 | 18460 | 18240 | 18600 | --- | | | | |
| 25 | 17770 | 17580 | 17620 | 18080 | 18450 | 18230 | 18660 | --- | | | | |
| 26 | 17740 | 17550 | 17630 | 18070 | 18440 | 18220 | 18640 | --- | | | | |
| 27 | 17720 | 17540 | 17620 | 18070 | 18440 | 18330 | 18630 | --- | | | | |
| 28 | 17710 | 17510 | 17710 | 18070 | 18440 | 18350 | 18620 | --- | | | | |
| 29 | 17670 | 17500 | 17720 | 18080 | 18470 | 18350 | 18620 | --- | | | | |
| 30 | 17880 | 17490 | 17720 | 18090 | --- | 18330 | 18620 | --- | | | | |
| 31 | 17880 | --- | 17710 | 18080 | --- | 18310 | --- | --- | | | | |
| MAX | 18140 | 17860 | 17720 | 18090 | 18470 | 18410 | 18660 | --- | | | | |
| MIN | 17670 | 17490 | 17390 | 17580 | 18060 | 18220 | 18330 | --- | | | | |
| (†) | 894.93 | 894.57 | 894.77 | 895.11 | 895.47 | 895.32 | 895.60 | --- | | | | |
| (‡) | -300 | -390 | +220 | +370 | +390 | -160 | +310 | --- | | | | |
| (††) | 163 | 125 | 127 | 129 | 128 | 204 | 151 | --- | | | | |

CAL YR 1979 MAX 20950 MIN 12880 ‡ - †† -
WTR YR 1980 MAX - MIN - ‡ - †† -

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal use by the city of Weatherford.

## 08045850 CLEAR FORK TRINITY RIVER NEAR WEATHERFORD, TX

**LOCATION.**--Lat 32°44'25", long 97°39'06", Parker County, Hydrologic Unit 12030102, near left end of bridge on weigh station exit road associated with Interstate Highway 20, 150 ft (46 m) downstream from Squaw Creek, 2.8 mi (4.5 km) downstream from Lake Weatherford Dam on the Clear Fork Trinity River, 3.8 mi (6.1 km) upstream from South Fork Trinity River, and 8.5 mi (13.7 km) east of county courthouse in Weatherford.

**DRAINAGE AREA.**--121 $mi^2$ (313 $km^2$).

**PERIOD OF RECORD.**--May to September 1980.

**GAGE.**--Water-stage recorder and crest-stage gage. Datum of gage is 810.00 ft (246.888 m) National Geodetic Vertical Datum of 1929 (State Department of Highways and Public Transportation bench mark).

**REMARKS.**--Records good. Flow is regulated by Lake Weatherford (see station 08045800). Records furnished by the city of Weatherford show that 2,520 acre-ft (3.11 $hm^3$) was diverted from Lake Weatherford for municipal use and that 1,500 acre-ft (1.85 $hm^3$) was returned to the South Fork Trinity River, a tributary downstream from this stations. Several observations of water temperature were obtained during the period May to September.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 112 $ft^3/s$ (3.17 $m^3/s$) May 20, 1980, gage height, 10.89 ft (3.31 m); minimum, 0.29 $ft^3/s$ (0.008 $m^3/s$) Aug. 27, 28, Sept. 1-6, 1980.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge during period May to September, 112 $ft^3/s$ (3.17 $m^3/s$) May 20 at 2315 hours, gage height, 10.89 ft (3.319 m); minimum, 0.29 $ft^3/s$ (0.008 $m^3/s$) Aug. 27, 28, Sept. 1-6.

### DISCHARGE, IN CUBIC FEET PER SECOND, MAY TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | 3.5 | 5.7 | 1.9 | .58 | .30 |
| 2 | | | | | | | | 5.0 | 5.2 | 1.8 | .55 | .30 |
| 3 | | | | | | | | 4.2 | 4.9 | 1.6 | .57 | .30 |
| 4 | | | | | | | | 3.8 | 4.6 | 1.5 | .60 | .30 |
| 5 | | | | | | | | 3.5 | 4.2 | 1.5 | .61 | .30 |
| 6 | | | | | | | | 3.4 | 3.9 | 1.3 | .60 | .30 |
| 7 | | | | | | | | 3.8 | 3.5 | 1.3 | .57 | .79 |
| 8 | | | | | | | | 6.1 | 3.4 | 1.3 | .55 | 4.0 |
| 9 | | | | | | | | 4.1 | 3.2 | 1.3 | .52 | 1.7 |
| 10 | | | | | | | | 4.0 | 3.1 | 1.1 | .58 | 1.2 |
| 11 | | | | | | | | 4.2 | 3.0 | 1.1 | .55 | .94 |
| 12 | | | | | | | | 4.8 | 2.8 | 1.1 | .57 | .90 |
| 13 | | | | | | | | 4.9 | 2.7 | .97 | .58 | .81 |
| 14 | | | | | | | | 7.8 | 2.6 | .91 | .57 | .75 |
| 15 | | | | | | | | 11 | 2.5 | .92 | .49 | .77 |
| 16 | | | | | | | | 8.7 | 2.5 | .87 | .48 | .75 |
| 17 | | | | | | | | 6.1 | 2.5 | .80 | .44 | .73 |
| 18 | | | | | | | | 5.2 | 2.4 | .75 | .42 | .78 |
| 19 | | | | | | | | 5.7 | 2.3 | .70 | .43 | .73 |
| 20 | | | | | | | | 12 | 2.3 | .77 | .42 | .68 |
| 21 | | | | | | | | 18 | 2.4 | .70 | .40 | .70 |
| 22 | | | | | | | | 12 | 2.3 | .71 | .38 | .70 |
| 23 | | | | | | | | 12 | 2.3 | .66 | .36 | .69 |
| 24 | | | | | | | | 11 | 2.2 | .64 | .36 | .76 |
| 25 | | | | | | | | 11 | 2.1 | .61 | .35 | .83 |
| 26 | | | | | | | | 9.7 | 2.2 | .63 | .34 | 1.2 |
| 27 | | | | | | | | 8.4 | 2.1 | .64 | .29 | 3.2 |
| 28 | | | | | | | | 7.8 | 1.9 | .63 | .33 | 2.8 |
| 29 | | | | | | | | 7.8 | 1.9 | .60 | .38 | 39 |
| 30 | | | | | | | | 7.2 | 1.9 | .59 | .35 | 1.6 |
| 31 | | | | | | | | 6.6 | --- | .53 | .34 | --- |
| TOTAL | | | | | | | | 223.3 | 88.6 | 30.43 | 14.56 | 68.81 |
| MEAN | | | | | | | | 7.20 | 2.95 | .98 | .47 | 2.29 |
| MAX | | | | | | | | 18 | 5.7 | 1.9 | .61 | 39 |
| MIN | | | | | | | | 3.4 | 1.9 | .53 | .29 | .30 |
| AC-FT | | | | | | | | 443 | 176 | 60 | 29 | 136 |

WTR YR 1980 TOTAL - MEAN - MAX - MIN - AC-FT -

## 08046500 BENBROOK LAKE NEAR BENBROOK, TX

**LOCATION.**--Lat 32°39'02", long 97°26'54", Tarrant County, Hydrologic Unit 12030102, in intake structure of Benbrook Dam on Clear Fork Trinity River, 2.5 mi (4.0 km) south of Benbrook, 3.5 mi (5.6 km) upstream from Marys Creek, and 14.6 mi (23.5 km) upstream from mouth.

**DRAINAGE AREA.**--429 mi² (1,111 km²).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--September 1952 to current year. Prior to October 1970, published as Benbrook Reservoir.

**REVISED RECORDS.**--WSP 1922: Drainage area.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

**REMARKS.**--The lake is formed by a rolled earthfill dam 9,130 ft (2,780 m) long, including a 500-foot (150 m) uncontrolled off-channel concrete-gravity spillway with a 100-foot (30 m) notch in center of ogee weir section. The outlet works consist of a 13.0-foot-diameter (4.0 m) concrete conduit controlled by two 6.5- by 13.0-foot (2.0 by 4.0 m) broome-type gates and two 30-inch (762 mm) steel pipes controlled by slide gates. Deliberate impoundment began Sept. 29, 1952. From August 1950 to Sept. 28, 1952, the lake was operated as a detention basin only. The capacity table is based on a survey made in 1945. The lake was built for flood control, navigation, and low-flow regulation. Corps of Engineers gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam........................................................ | 747.0 | - |
| Crest of spillway................................................. | 724.0 | 258,600 |
| Crest of notch in spillway........................................ | 710.0 | 164,800 |
| Top of conservation storage....................................... | 694.0 | 88,250 |
| Crest of intake to wet wells (inverts)............................ | 656.0 | 6,550 |
| Lowest gated outlet (invert)...................................... | 622.0 | 12 |

**COOPERATION.**--Records of elevations and contents furnished by the Corps of Engineers and reviewed by the Geological Survey.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 185,000 acre-ft (228 hm³) June 6, 1957, elevation, 713.35 ft (217.429 m); minimum since lake first filled in 1957, 64,630 acre-ft (79.7 hm³) Sept. 15, 1964, elevation, 687.18 ft (209.452 m).

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 93,880 acre-ft (116 hm³) May 22 at 2400 hours, elevation, 695.49 ft (211.985 m); minimum, 74,180 acre-ft (91.5 hm³) Sept. 25 at 2200 hours, elevation, 690.08 ft (210.336 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 690.0 | 73,900 | 694.0 | 88,250 |
| 692.0 | 80,890 | 696.0 | 95,990 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 86090 | 84860 | 83980 | 85830 | 89120 | 89200 | 89470 | 88400 | 92220 | 86500 | 81620 | 77980 |
| 2 | 86010 | 84780 | 83940 | 86010 | 89010 | 89280 | 90730 | 88740 | 91950 | 86390 | 81440 | 77880 |
| 3 | 85830 | 84710 | 83940 | 86010 | 88820 | 89350 | 91530 | 88860 | 91640 | 86160 | 81180 | 77740 |
| 4 | 85750 | 84640 | 83940 | 86010 | 88670 | 89390 | 91490 | 88970 | 91410 | 85980 | 80960 | 77600 |
| 5 | 85640 | 84600 | 83910 | 86050 | 88440 | 89390 | 91380 | 89010 | 91110 | 85790 | 80760 | 77350 |
| 6 | 85570 | 84450 | 83870 | 86090 | 88250 | 89510 | 91220 | 89160 | 90800 | 85640 | 80640 | 77210 |
| 7 | 85490 | 84450 | 83870 | 86090 | 88210 | 89540 | 91150 | 89430 | 90500 | 85460 | 80500 | 77070 |
| 8 | 85380 | 84490 | 83870 | 86120 | 88550 | 89620 | 90800 | 89580 | 90160 | 85310 | 80360 | 77000 |
| 9 | 85190 | 84450 | 83870 | 86090 | 88860 | 89700 | 90610 | 89740 | 89930 | 85160 | 80290 | 76970 |
| 10 | 85160 | 84420 | 83870 | 86160 | 89090 | 89770 | 90380 | 89810 | 89580 | 84970 | 80180 | 76930 |
| 11 | 85080 | 84340 | 83910 | 86160 | 89160 | 89890 | 90040 | 89890 | 89320 | 84820 | 80080 | 76860 |
| 12 | 84970 | 84340 | 84340 | 86160 | 89160 | 89890 | 89890 | 89960 | 88940 | 84640 | 80040 | 76720 |
| 13 | 84860 | 84340 | 84380 | 86200 | 89050 | 90000 | 90420 | 90040 | 88590 | 84420 | 79970 | 76520 |
| 14 | 84780 | 84340 | 84420 | 86200 | 88970 | 89930 | 90460 | 90350 | 88250 | 84230 | 79860 | 76380 |
| 15 | 85160 | 84310 | 84450 | 86270 | 88820 | 89740 | 90380 | 90920 | 88020 | 84020 | 79720 | 76210 |
| 16 | 85340 | 84270 | 84380 | 86310 | 88710 | 89510 | 90270 | 91340 | 87910 | 83870 | 79650 | 76040 |
| 17 | 85380 | 84270 | 84380 | 86350 | 88630 | 89280 | 90040 | 91300 | 87800 | 83720 | 79470 | 75830 |
| 18 | 85340 | 84270 | 84380 | 86390 | 88780 | 88970 | 89890 | 91070 | 87760 | 83510 | 79370 | 75620 |
| 19 | 85310 | 84270 | 84380 | 86460 | 88900 | 88780 | 89740 | 91070 | 87730 | 83360 | 79260 | 75450 |
| 20 | 85270 | 84340 | 84380 | 86460 | 89010 | 88440 | 89580 | 91300 | 87540 | 83220 | 79150 | 75210 |
| 21 | 85190 | 84340 | 84520 | 86910 | 89120 | 88290 | 89390 | 93750 | 87580 | 83070 | 79080 | 75030 |
| 22 | 85080 | 84310 | 84640 | 88100 | 89120 | 88170 | 89160 | 93990 | 87500 | 82850 | 78940 | 74860 |
| 23 | 85040 | 84270 | 84930 | 88550 | 88970 | 88170 | 88970 | 93830 | 87500 | 82710 | 78910 | 74650 |
| 24 | 84970 | 84230 | 85380 | 88780 | 88900 | 88170 | 89090 | 93830 | 87470 | 82560 | 78800 | 74520 |
| 25 | 84900 | 84200 | 85420 | 88860 | 88940 | 88290 | 89200 | 93710 | 87430 | 82450 | 78620 | 74340 |
| 26 | 84820 | 84160 | 85490 | 88940 | 89010 | 88360 | 89050 | 93550 | 87350 | 82340 | 78480 | 74270 |
| 27 | 84750 | 84120 | 85490 | 89010 | 89090 | 88630 | 88820 | 93360 | 87240 | 82270 | 78370 | 74550 |
| 28 | 84670 | 84090 | 85530 | 89120 | 89160 | 89120 | 88630 | 93240 | 87020 | 82200 | 78410 | 74900 |
| 29 | 84640 | 84020 | 85680 | 89240 | 89240 | 89320 | 88480 | 93000 | 86910 | 82090 | 78340 | 75970 |
| 30 | 84930 | 84020 | 85830 | 89350 | --- | 89350 | 88400 | 92770 | 86650 | 81980 | 78230 | 76170 |
| 31 | 84930 | --- | 85790 | 89320 | --- | 89390 | --- | 92490 | --- | 81910 | 78090 | --- |
| MAX | 86090 | 84860 | 85830 | 89350 | 89240 | 90000 | 91530 | 93990 | 92220 | 86500 | 81620 | 77980 |
| MIN | 84640 | 84020 | 83870 | 85830 | 88210 | 88170 | 88400 | 88400 | 86650 | 81910 | 78090 | 74270 |
| (†) | 693.11 | 692.86 | 693.34 | 694.28 | 694.26 | 694.30 | 694.04 | 695.11 | 693.59 | 692.28 | 691.21 | 690.66 |
| (‡) | -1270 | -910 | +1770 | +3530 | -80 | +150 | -990 | +4090 | -5840 | -4740 | -3820 | -1920 |

CAL YR 1979 MAX 117600 MIN 67610 ‡ +18010
WTR YR 1980 MAX 93990 MIN 74270 ‡ -10030

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

## 08046500 BENBROOK LAKE NEAR BENBROOK, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

### 323858097265601 BENBROOK LAKE SITE AC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | | |
| 05... | 0830 | 1.0 | 324 | 8.1 | 7.0 | 1.30 | 10.2 | 85 | 130 | 14 |
| 05... | 0832 | 10 | 324 | 8.1 | 7.0 | -- | 10.2 | 85 | -- | -- |
| 05... | 0833 | 20 | 324 | 8.1 | 7.0 | -- | 10.2 | 85 | -- | -- |
| 05... | 0834 | 30 | 324 | 8.1 | 7.0 | -- | 10.2 | 85 | -- | -- |
| 05... | 0835 | 40 | 324 | 8.1 | 7.0 | -- | 10.2 | 85 | -- | -- |
| 05... | 0836 | 50 | 324 | 8.1 | 7.0 | -- | 10.2 | 85 | -- | -- |
| 05... | 0837 | 61 | 324 | 7.9 | 7.0 | -- | 10.2 | 85 | 130 | 12 |
| MAY | | | | | | | | | | |
| 05... | 0945 | 1.0 | 346 | 8.5 | 21.5 | 1.40 | 10.0 | 115 | 140 | 21 |
| 05... | 0947 | 10 | 346 | 8.5 | 21.0 | -- | 9.8 | 111 | -- | -- |
| 05... | 0948 | 20 | 354 | 8.4 | 19.0 | -- | 8.4 | 92 | -- | -- |
| 05... | 0949 | 30 | 359 | 8.1 | 17.5 | -- | 6.4 | 68 | -- | -- |
| 05... | 0950 | 40 | 362 | 7.9 | 16.0 | -- | 5.1 | 53 | -- | -- |
| 05... | 0951 | 50 | 370 | 7.7 | 15.0 | -- | 2.3 | 23 | -- | -- |
| 05... | 0952 | 61 | 370 | 7.6 | 15.0 | -- | 1.7 | 17 | 150 | 21 |
| AUG | | | | | | | | | | |
| 21... | 1140 | 1.0 | 305 | 8.8 | 30.0 | .90 | 8.8 | 119 | 110 | 16 |
| 21... | 1142 | 10 | 305 | 8.5 | 28.5 | -- | 7.4 | 97 | -- | -- |
| 21... | 1144 | 20 | 309 | 8.3 | 28.0 | -- | 6.4 | 83 | -- | -- |
| 21... | 1146 | 30 | 309 | 8.0 | 28.0 | -- | 5.4 | 70 | -- | -- |
| 21... | 1148 | 35 | 309 | 8.0 | 28.0 | -- | 5.2 | 68 | -- | -- |
| 21... | 1150 | 40 | 309 | 7.9 | 28.0 | -- | 4.9 | 64 | -- | -- |
| 21... | 1152 | 45 | 313 | 7.7 | 27.5 | -- | 3.9 | 50 | -- | -- |
| 21... | 1154 | 50 | 412 | 7.4 | 22.0 | -- | .1 | 1 | -- | -- |
| 21... | 1156 | 56 | 427 | 7.6 | 20.5 | -- | .1 | 1 | 170 | 0 |

| DATE | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 43 | 5.2 | 15 | .6 | 3.7 | 140 | 0 | 26 | 18 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 42 | 5.3 | 15 | .6 | 3.7 | 140 | 0 | 25 | 18 |
| MAY | | | | | | | | | |
| 05... | 46 | 5.9 | 16 | .6 | 3.6 | 140 | 2 | 27 | 17 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 51 | 6.0 | 15 | .5 | 3.7 | 160 | 0 | 24 | 17 |
| AUG | | | | | | | | | |
| 21... | 34 | 5.7 | 17 | .7 | 3.9 | 100 | 6 | 24 | 21 |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | 57 | 6.2 | 16 | .5 | 4.2 | 230 | 0 | 4.4 | 14 |

## BENBROOK LAKE NEAR BENBROOK, TX--Continued

### 323858097265601 BENBROOK LAKE SITE AC--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | .2 | 3.1 | 183 | .15 | .62 | .77 | .020 | 20 | <1 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | .09 | .65 | .74 | .020 | 10 | 0 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | 3.0 | 181 | .10 | .60 | .70 | .010 | <10 | 6 |
| MAY | | | | | | | | | |
| 05... | .2 | .4 | 187 | .01 | .72 | .73 | .020 | 30 | 10 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | .04 | .82 | .86 | .010 | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | .09 | .98 | 1.1 | .010 | 140 | 30 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | 7.1 | 203 | .08 | 1.2 | 1.3 | .030 | 500 | 210 |
| AUG | | | | | | | | | |
| 21... | .3 | 6.2 | 167 | .00 | .92 | .92 | .040 | <10 | 7 |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | .00 | 1.1 | 1.1 | .040 | 40 | 60 |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | .00 | 3.3 | 3.3 | .520 | 340 | 2100 |
| 21... | -- | 13 | 230 | .00 | 3.6 | 3.6 | .650 | 380 | 1500 |

### 323908097273401 BENBROOK LAKE SITE AL

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 05... | 0905 | 1.0 | 324 | 8.1 | 7.0 | 10.2 | 85 |
| 05... | 0906 | 10 | 324 | 8.1 | 7.0 | 10.2 | 85 |
| 05... | 0907 | 20 | 324 | 8.1 | 7.0 | 10.2 | 85 |
| 05... | 0908 | 30 | 324 | 8.1 | 7.0 | 10.1 | 84 |
| 05... | 0909 | 40 | 324 | 8.1 | 7.0 | 10.1 | 84 |
| 05... | 0910 | 54 | 324 | 8.1 | 7.0 | 10.1 | 84 |
| MAY | | | | | | | |
| 05... | 1015 | 1.0 | 344 | 8.4 | 21.5 | 10.0 | 115 |
| 05... | 1016 | 10 | 344 | 8.5 | 20.5 | 10.2 | 115 |
| 05... | 1017 | 20 | 354 | 8.5 | 19.0 | 8.5 | 93 |
| 05... | 1018 | 30 | 361 | 8.0 | 17.5 | 6.2 | 66 |
| 05... | 1019 | 36 | 361 | 8.0 | 16.5 | 5.5 | 57 |
| AUG | | | | | | | |
| 21... | 1225 | 1.0 | 305 | 8.8 | 30.0 | 9.3 | 126 |
| 21... | 1227 | 10 | 307 | 8.5 | 28.5 | 7.2 | 95 |
| 21... | 1229 | 20 | 307 | 8.4 | 28.5 | 7.0 | 92 |
| 21... | 1231 | 30 | 310 | 8.1 | 28.0 | 5.4 | 70 |
| 21... | 1233 | 35 | 310 | 8.0 | 28.0 | 5.0 | 65 |

BENBROOK LAKE NEAR BENBROOK, TX--Continued

323735097274701 BENBROOK LAKE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 1050 | 1.0 | 324 | 8.1 | 7.0 | 1.10 | 9.9 | 82 | 120 |
| 05... | 1052 | 10 | 324 | 8.1 | 7.0 | -- | 9.9 | 82 | -- |
| 05... | 1053 | 20 | 324 | 8.1 | 7.0 | -- | 9.9 | 82 | -- |
| 05... | 1054 | 30 | 324 | 8.1 | 7.0 | -- | 9.9 | 82 | -- |
| 05... | 1055 | 40 | 324 | 8.1 | 7.0 | -- | 9.9 | 82 | -- |
| 05... | 1056 | 44 | 324 | 8.1 | 7.0 | -- | 9.9 | 82 | 130 |
| MAY | | | | | | | | | |
| 05... | 1035 | 1.0 | 344 | 8.4 | 21.5 | 1.50 | 10.2 | 117 | 140 |
| 05... | 1036 | 10 | 347 | 8.4 | 20.5 | -- | 9.8 | 110 | -- |
| 05... | 1037 | 20 | 358 | 8.2 | 18.0 | -- | 6.8 | 73 | -- |
| 05... | 1038 | 30 | 361 | 7.9 | 17.5 | -- | 5.5 | 59 | -- |
| 05... | 1039 | 40 | 368 | 7.7 | 16.5 | -- | 2.8 | 29 | -- |
| 05... | 1040 | 43 | 370 | 7.6 | 16.5 | -- | 1.7 | 18 | 150 |
| AUG | | | | | | | | | |
| 21... | 1250 | 1.0 | 306 | 8.7 | 30.5 | .80 | 9.0 | 122 | 110 |
| 21... | 1252 | 10 | 309 | 8.4 | 28.0 | -- | 6.9 | 90 | -- |
| 21... | 1254 | 20 | 309 | 8.2 | 28.0 | -- | 6.3 | 82 | -- |
| 21... | 1256 | 30 | 314 | 7.8 | 28.0 | -- | 4.4 | 57 | -- |
| 21... | 1258 | 40 | 318 | 7.6 | 28.0 | -- | 3.0 | 39 | 110 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 9 | 41 | 5.3 | 14 | .5 | 3.7 | 140 | 0 | 23 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 14 | 43 | 5.3 | 14 | .5 | 3.8 | 140 | 0 | 25 |
| MAY | | | | | | | | | |
| 05... | 20 | 45 | 5.8 | 14 | .5 | 3.5 | 140 | 1 | 31 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 16 | 49 | 6.0 | 14 | .5 | 3.5 | 160 | 0 | 26 |
| AUG | | | | | | | | | |
| 21... | 14 | 34 | 5.5 | 17 | .7 | 3.9 | 100 | 7 | 25 |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | 12 | 35 | 5.5 | 16 | .7 | 3.9 | 120 | 0 | 24 |

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 18 | 2.9 | 177 | .08 | .63 | .71 | .020 | <10 | <1 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | .04 | .66 | .70 | .020 | 10 | 0 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 18 | 3.1 | 181 | .12 | .66 | .78 | .030 | <10 | <1 |
| MAY | | | | | | | | | |
| 05... | 17 | .3 | 187 | .01 | .73 | .74 | .030 | <10 | <3 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | .05 | .70 | .75 | .010 | 20 | 10 |
| 05... | -- | -- | -- | .07 | .88 | .95 | .010 | 30 | 50 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 17 | 3.2 | 198 | .07 | 1.2 | 1.3 | .020 | 10 | 150 |
| AUG | | | | | | | | | |
| 21... | 22 | 6.2 | 170 | .00 | .78 | .78 | .030 | <10 | <1 |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | .00 | 1.0 | 1.0 | .030 | 10 | 0 |
| 21... | -- | -- | -- | .00 | 1.0 | 1.0 | .050 | 20 | 10 |
| 21... | 23 | 6.7 | 173 | .00 | 1.3 | 1.3 | .080 | <10 | 70 |

## BENBROOK LAKE NEAR BENBROOK, TX--Continued

### 323628097275101 BENBROOK LAKE SITE CR

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 05... | 1010 | 1.0 | 328 | 8.2 | 7.0 | 10.4 | 87 |
| 05... | 1011 | 10 | 328 | 8.2 | 7.0 | 10.4 | 87 |
| 05... | 1012 | 25 | 328 | 8.2 | 7.0 | 10.4 | 87 |
| MAY | | | | | | | |
| 05... | 1135 | 1.0 | 348 | 8.2 | 22.5 | 9.7 | 113 |
| 05... | 1136 | 10 | 354 | 8.1 | 20.0 | 7.8 | 87 |
| 05... | 1137 | 20 | 367 | 7.7 | 18.0 | 3.6 | 39 |
| 05... | 1138 | 23 | 367 | 7.6 | 18.0 | 3.3 | 35 |
| AUG | | | | | | | |
| 21... | 1440 | 1.0 | 308 | 8.8 | 30.0 | 10.4 | 141 |
| 21... | 1442 | 10 | 316 | 8.4 | 27.5 | 6.7 | 86 |
| 21... | 1444 | 20 | 322 | 8.0 | 27.5 | 4.9 | 63 |
| 21... | 1446 | 23 | 322 | 8.0 | 27.5 | 4.8 | 62 |

### 323629097280901 BENBROOK LAKE SITE CL

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 05... | 1020 | 1.0 | 330 | 8.2 | 7.0 | 10.4 | 87 |
| 05... | 1021 | 10 | 330 | 8.2 | 7.0 | 10.4 | 87 |
| 05... | 1022 | 22 | 330 | 8.2 | 7.0 | 10.4 | 87 |
| MAY | | | | | | | |
| 05... | 1120 | 1.0 | 345 | 8.3 | 21.5 | 10.1 | 116 |
| 05... | 1121 | 10 | 356 | 8.0 | 20.0 | 6.8 | 76 |
| 05... | 1122 | 21 | 368 | 7.6 | 18.0 | 2.2 | 24 |
| AUG | | | | | | | |
| 21... | 1420 | 1.0 | 308 | 8.9 | 29.5 | 10.4 | 139 |
| 21... | 1422 | 10 | 316 | 8.5 | 28.0 | 7.4 | 96 |
| 21... | 1424 | 21 | 322 | 8.1 | 27.0 | 5.3 | 67 |

### 323652097291901 BENBROOK LAKE SITE DC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 0935 | 1.0 | 336 | 8.2 | 7.5 | .90 | 10.6 | 90 | 130 |
| 05... | 0938 | 10 | 336 | 8.2 | 7.0 | -- | 10.6 | 88 | -- |
| 05... | 0939 | 20 | 336 | 8.2 | 7.0 | -- | 10.6 | 88 | -- |
| 05... | 0940 | 29 | 336 | 8.2 | 7.0 | -- | 10.6 | 88 | 140 |
| MAY | | | | | | | | | |
| 05... | 1105 | 1.0 | 355 | 8.4 | 21.0 | 1.20 | 9.5 | 108 | 140 |
| 05... | 1107 | 10 | 361 | 7.9 | 19.5 | -- | 5.7 | 63 | -- |
| 05... | 1108 | 20 | 361 | 7.8 | 18.5 | -- | 5.0 | 54 | 140 |
| 05... | 1109 | 27 | 372 | 7.6 | 18.0 | -- | 3.0 | 32 | 150 |
| AUG | | | | | | | | | |
| 21... | 1340 | 1.0 | 307 | 8.7 | 29.5 | .60 | 9.4 | 125 | 110 |
| 21... | 1342 | 10 | 316 | 8.0 | 27.5 | -- | 5.5 | 71 | -- |
| 21... | 1344 | 20 | 316 | 8.1 | 27.5 | -- | 5.5 | 71 | -- |
| 21... | 1346 | 24 | 316 | 8.1 | 27.5 | -- | 5.4 | 69 | 110 |

## BENBROOK LAKE NEAR BENBROOK, TX--Continued

### 323652097291901 BENBROOK LAKE SITE DC--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 11 | 45 | 5.3 | 15 | .6 | 3.7 | 150 | 0 | 25 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 14 | 46 | 5.3 | 15 | .6 | 3.7 | 150 | 0 | 25 |
| MAY | | | | | | | | | |
| 05... | 17 | 47 | 5.8 | 16 | .6 | 3.4 | 150 | 1 | 24 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | 48 | 5.7 | 15 | .5 | 3.4 | -- | -- | -- |
| 05... | 18 | 50 | 6.0 | 16 | .6 | 3.5 | 160 | 0 | 23 |
| AUG | | | | | | | | | |
| 21... | 14 | 35 | 5.6 | 17 | .7 | 4.0 | 110 | 4 | 26 |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 21... | 15 | 36 | 5.6 | 17 | .7 | 3.9 | 120 | 0 | 25 |

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 19 | 3.2 | 190 | .21 | .65 | .86 | .050 | 10 | <1 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | .11 | .58 | .69 | .030 | 10 | 0 |
| 05... | 19 | 3.3 | 191 | .13 | .69 | .82 | .050 | <10 | 5 |
| MAY | | | | | | | | | |
| 05... | 17 | .4 | 189 | .00 | .46 | .46 | .030 | <10 | <3 |
| 05... | -- | -- | -- | .02 | .64 | .66 | .020 | 30 | 10 |
| 05... | -- | -- | -- | .05 | .74 | .79 | .020 | <10 | -- |
| 05... | 17 | 2.5 | 197 | .05 | .93 | .98 | .020 | <10 | 9 |
| AUG | | | | | | | | | |
| 21... | 22 | 6.1 | 174 | .00 | 1.3 | 1.3 | .040 | <10 | <1 |
| 21... | -- | -- | -- | .00 | .99 | .99 | .060 | 10 | 0 |
| 21... | -- | -- | -- | .00 | 1.6 | 1.6 | .070 | 10 | 0 |
| 21... | 22 | 6.7 | 175 | .00 | 1.3 | 1.3 | .080 | <10 | 10 |

BENBROOK LAKE NEAR BENBROOK, TX--Continued

323858097265601 BENBROOK LAKE SITE AC

## PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| | | | |
|---|---|---|---|
| DATE | FEB 5,80 | MAY 5,80 | AUG 21,80 |
| TIME | 0831 | 0946 | 1141 |
| TOTAL CELLS/ML | 9600 | 3300 | 130000 |
| DIVERSITY: DIVISION | 1.6 | 1.2 | 0.1 |
| .CLASS | 1.6 | 1.2 | 0.1 |
| ..ORDER | 1.6 | 1.4 | 0.4 |
| ...FAMILY | 1.7 | 1.6 | 1.0 |
| ....GENUS | 2.2 | 2.6 | 1.5 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 440 | 5 | 280 | 8 | * | 0 |
| ....CHLORELLA | 1700# | 18 | 20 | 1 | -- | - |
| ....CHODATELLA | -- | - | 40 | 1 | -- | - |
| ....DICTYOSPHAERIUM | -- | - | -- | - | * | 0 |
| ....KIRCHNERIELLA | 380 | 4 | -- | - | * | 0 |
| ....OOCYSTIS | -- | - | 200 | 6 | -- | - |
| ....SELENASTRUM | -- | - | 100 | 3 | * | 0 |
| ....TETRAEDRON | -- | - | -- | - | * | 0 |
| ....TREUBARIA | -- | - | 20 | 1 | -- | - |
| ...SCENEDESMACEAE | | | | | | |
| ....CRUCIGENIA | -- | - | 20 | 1 | -- | - |
| ....SCENEDESMUS | -- | - | 180 | 5 | -- | - |
| ....TETRASTRUM | 220 | 2 | 160 | 5 | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | 40 | 1 | -- | - |
| ..ZYGNEMATALES | | | | | | |
| ...DESMIDIACEAE | | | | | | |
| ....COSMARIUM | -- | - | -- | - | * | 0 |
| ....STAURASTRUM | -- | - | -- | - | * | 0 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 3300# | 34 | 120 | 4 | -- | - |
| ....MELOSIRA | 220 | 2 | -- | - | -- | - |
| ..PENNALES | | | | | | |
| ...FRAGILARIACEAE | | | | | | |
| ....SYNEDRA | -- | - | -- | - | * | 0 |
| ...NAVICULACEAE | | | | | | |
| ....NAVICULA | -- | - | 40 | 1 | -- | - |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | -- | - | -- | - | * | 0 |
| .CHRYSOPHYCEAE | | | | | | |
| ..CHRYSOMONADALES | | | | | | |
| ...OCHROMONADACEAE | | | | | | |
| ....OCHROMONAS | -- | - | 40 | 1 | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | -- | - | -- | - | 1100 | 1 |
| ....ANACYSTIS | 3300# | 34 | 1700# | 52 | 3100 | 2 |
| ....COCCOCHLORIS | -- | - | 320 | 10 | -- | - |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENOPSIS | -- | - | -- | - | 6800 | 5 |
| ....APHANIZOMENON | -- | - | -- | - | 12000 | 10 |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | -- | - | 8200 | 6 |
| ....OSCILLATORIA | -- | - | -- | - | 93000# | 73 |
| ...RIVULARIACEAE | | | | | | |
| ....RAPHIDIOPSIS | -- | - | -- | - | 1100 | 1 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....TRACHELOMONAS | 55 | 1 | -- | - | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## BENBROOK LAKE NEAR BENBROOK, TX--Continued

### 323652097291901 BENBROOK LAKE SITE DC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| | | | |
|---|---|---|---|
| DATE | FEB 5,80 | MAY 5,80 | AUG 21,80 |
| TIME | 0936 | 1106 | 1341 |
| TOTAL CELLS/ML | 5800 | 6200 | 830000 |
| DIVERSITY: DIVISION | 1.0 | 1.6 | 0.1 |
| .CLASS | 1.0 | 1.6 | 0.1 |
| ..ORDER | 1.0 | 1.9 | 0.3 |
| ...FAMILY | 1.3 | 2.4 | 1.0 |
| ....GENUS | 2.3 | 3.4 | 1.8 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...COELASTRACEAE | | | | | | |
| ....COELASTRUM | -- | - | 200 | 3 | * | 0 |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 1000# | 18 | 200 | 3 | * | 0 |
| ....CHLORELLA | 1300# | 23 | 50 | 1 | -- | - |
| ....CHODATELLA | 50 | 1 | * | 0 | -- | - |
| ....DICTYOSPHAERIUM | -- | - | -- | - | * | 0 |
| ....KIRCHNERIELLA | 500 | 9 | 400 | 6 | * | 0 |
| ....OOCYSTIS | -- | - | 200 | 3 | * | 0 |
| ....SELENASTRUM | -- | - | 130 | 2 | * | 0 |
| ...SCENEDESMACEAE | | | | | | |
| ....SCENEDESMUS | 350 | 6 | 600 | 10 | -- | - |
| ..TETRASPORALES | | | | | | |
| ...COCCOMYXACEAE | | | | | | |
| ....ELAKATOTHRIX | -- | - | -- | - | * | 0 |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | 100 | 2 | -- | - |
| ...VOLVOCACEAE | | | | | | |
| ....GONIUM | -- | - | 400 | 6 | -- | - |
| ..ZYGNEMATALES | | | | | | |
| ...DESMIDIACEAE | | | | | | |
| ....COSMARIUM | -- | - | -- | - | * | 0 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 2200# | 39 | 350 | 6 | * | 0 |
| ....MELOSIRA | 200 | 3 | 150 | 2 | -- | - |
| ..PENNALES | | | | | | |
| ...FRAGILARIACEAE | | | | | | |
| ....SYNEDRA | 50 | 1 | -- | - | * | 0 |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | -- | - | * | 0 | * | 0 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | | | |
| ....CHROOMONAS | -- | - | 330 | 5 | -- | - |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | -- | - | 50 | 1 | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | -- | - | 800 | 13 | 8300 | 1 |
| ....ANACYSTIS | -- | - | 1900# | 31 | 22000 | 3 |
| ....COCCOCHLORIS | -- | - | 300 | 5 | -- | - |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENOPSIS | -- | - | -- | - | 150000# | 18 |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | -- | - | 200000# | 24 |
| ....OSCILLATORIA | -- | - | -- | - | 440000# | 53 |
| ....SPIRULINA | -- | - | -- | - | * | 0 |
| ...RIVULARIACEAE | | | | | | |
| ....RAPHIDIOPSIS | -- | - | -- | - | * | 0 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 08047000 CLEAR FORK TRINITY RIVER NEAR BENBROOK, TX

**LOCATION.**--Lat 32°39'54", long 97°26'30", Tarrant County, Hydrologic Unit 12030102, on left bank 1.5 mi (2.4 km) downstream from Benbrook Dam, 1.7 mi (2.7 km) southeast of Benbrook, 2.9 mi (4.7 km) upstream from Marys Creek, and 13.1 mi (21.1 km) upstream from mouth.

**DRAINAGE AREA.**--431 mi² (1,116 km²).

**PERIOD OF RECORD.**--July 1947 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 604.22 ft (184.166 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

**REMARKS.**--Records good. Flow regulated by Benbrook Lake (station 08046500) since September 1952. Diversion 1.0 mi (1.6 km) upstream for Pecan Valley Golf Course. Several observations of water temperature were made during the year. A gage-height telemeter was installed at this station by the Corps of Engineers on Nov. 29, 1977.

**AVERAGE DISCHARGE.**--5 years (water years 1948-52) prior to regulation by Benbrook Lake, 105 ft³/s (2.974 m³/s), 76,070 acre-ft/yr (93.8 hm³/yr); 27 years (water years 1953-79) regulated, unadjusted, 66.5 ft³/s (1.883 m³/s), 48,180 acre-ft/yr (59.4 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 82,900 ft³/s (2,350 m³/s) May 17, 1949, gage height, 28.72 ft (8.754 m), from rating curve extended above 11,000 ft³/s (312 m³/s) on basis of velocity-area studies and slope-area measurement of 82,900 ft³/s (2,350 m³/s); no flow at times most years. Maximum discharge since construction of Benbrook Dam in 1952, 4,710 ft³/s (133 m³/s) May 7, 1979, gage height, 11.27 ft (3.435 m); maximum gage height, 12.20 ft (3.719 m) Apr. 7, 1977.

Maximum stage since at least 1922, that of May 17, 1949.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 4,710 ft³/s (133 m³/s) May 7, gage height, 11.27 ft (3.435 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 17 | .39 | .35 | 137 | .93 | 1.5 | 18 | 148 | 22 | 47 | 9.1 |
| 2 | 16 | 18 | .39 | .39 | 137 | .81 | 4.8 | 22 | 148 | 23 | 47 | 9.5 |
| 3 | 16 | 17 | .39 | .37 | 137 | .85 | 44 | 21 | 148 | 28 | 49 | 23 |
| 4 | 16 | 18 | .39 | .39 | 137 | .74 | 137 | 20 | 133 | 33 | 32 | 49 |
| 5 | 16 | 17 | .39 | .39 | 137 | .81 | 138 | 20 | 146 | 33 | 8.9 | 60 |
| 6 | 16 | 18 | .39 | .39 | 137 | .87 | 142 | 20 | 145 | 34 | 8.8 | 53 |
| 7 | 16 | 12 | .39 | .32 | 55 | .97 | 142 | 19 | 145 | 34 | 19 | 55 |
| 8 | 16 | .43 | .39 | .35 | 1.8 | .77 | 142 | 19 | 145 | 38 | 8.1 | 30 |
| 9 | 17 | .48 | .39 | .39 | .78 | .84 | 142 | 19 | 144 | 45 | 8.5 | 11 |
| 10 | 17 | .49 | .39 | .39 | .79 | .62 | 142 | 19 | 143 | 46 | 8.9 | 10 |
| 11 | 17 | .49 | .39 | .39 | 61 | .47 | 143 | 18 | 143 | 46 | 9.2 | 9.5 |
| 12 | 17 | .50 | 3.4 | .39 | 137 | .44 | 144 | 18 | 144 | 46 | 9.2 | 46 |
| 13 | 17 | .56 | .42 | .39 | 137 | .47 | 149 | 18 | 144 | 47 | 9.6 | 60 |
| 14 | 17 | .62 | .39 | .39 | 137 | 37 | 144 | 20 | 144 | 47 | 9.1 | 61 |
| 15 | 23. | .30 | .39 | .39 | 137 | 136 | 145 | 22 | 72 | 48 | 8.6 | 62 |
| 16 | 18 | .26 | .39 | .39 | 137 | 137 | 145 | 57 | 23 | 46 | 8.6 | 62 |
| 17 | 18 | .26 | .39 | .39 | 96 | 136 | 145 | 139 | 16 | 35 | 8.6 | 62 |
| 18 | 17 | .31 | .39 | .39 | .84 | 137 | 145 | 139 | 6.7 | 27 | 8.1 | 67 |
| 19 | 17 | .32 | .42 | .39 | .69 | 136 | 145 | 64 | 8.0 | 28 | 8.1 | 70 |
| 20 | 17 | .32 | .47 | .39 | .81 | 137 | 145 | 20 | 9.0 | 28 | 7.6 | 69 |
| 21 | 17 | .32 | .50 | .57 | 1.0 | 136 | 145 | 139 | 8.9 | 18 | 6.4 | 69 |
| 22 | 17 | .38 | .99 | 6.5 | 39 | 80 | 145 | 319 | 9.6 | 19 | 7.7 | 58 |
| 23 | 17 | .39 | 7.8 | .39 | 131 | .49 | 145 | 265 | 9.3 | 20 | 8.3 | 68 |
| 24 | 17 | .39 | .38 | .37 | 93 | .34 | 154 | 143 | 9.2 | 18 | 9.0 | 67 |
| 25 | 17 | .39 | .32 | .37 | .48 | .45 | 145 | 144 | 8.9 | 25 | 13 | 67 |
| 26 | 17 | .39 | .34 | .39 | .28 | .47 | 145 | 144 | 8.3 | 32 | 12 | 66 |
| 27 | 17 | .39 | .39 | .39 | .26 | .97 | 145 | 145 | 30 | 8.8 | 18 | 37 |
| 28 | 17 | .39 | .60 | .39 | .20 | 2.2 | 145 | 145 | 60 | 8.2 | 7.7 | 8.6 |
| 29 | 17 | .39 | .40 | .39 | .82 | .90 | 145 | 147 | 52 | 9.1 | 9.1 | 23 |
| 30 | 22 | .39 | .32 | .39 | --- | .82 | 71 | 147 | 37 | 8.1 | 9.4 | 24 |
| 31 | 18 | --- | .32 | 79 | --- | 1.1 | --- | 147 | --- | 30 | 9.1 | --- |
| TOTAL | 533 | 126.16 | 23.31 | 96.78 | 1990.75 | 1089.33 | 3870.3 | 2597 | 2387.9 | 930.2 | 433.6 | 1375.7 |
| MEAN | 17.2 | 4.21 | .75 | 3.12 | 68.6 | 35.1 | 129 | 83.8 | 79.6 | 30.0 | 14.0 | 45.9 |
| MAX | 23 | 18 | 7.8 | 79 | 137 | 137 | 154 | 319 | 148 | 48 | 49 | 70 |
| MIN | 16 | .26 | .32 | .32 | .20 | .34 | 1.5 | 18 | 6.7 | 8.1 | 6.4 | 8.6 |
| AC-FT | 1060 | 250 | 46 | 192 | 3950 | 2160 | 7680 | 5150 | 4740 | 1850 | 860 | 2730 |

CAL YR 1979 TOTAL 48893.21 MEAN 134 MAX 4530 MIN .05 AC-FT 96980
WTR YR 1980 TOTAL 15454.03 MEAN 42.2 MAX 319 MIN .20 AC-FT 30650

## 08047500 CLEAR FORK TRINITY RIVER AT FORT WORTH, TX

LOCATION.--Lat 32°43'56", long 97°21'31", Tarrant County, Hydrologic Unit 12030102, at Fort Worth pumping station on left bank, 240 ft (73 m) upstream from the Texas and Pacific Railway Co. bridge in Fort Worth, 830 ft (253 m) upstream from East-West Expressway bridge, 2.5 mi (4.0 km) upstream from mouth, 5 mi (8 km) downstream from Marys Creek, and 10 mi (16 km) downstream from Benbrook Dam.

DRAINAGE AREA.--518 mi$^2$ (1,342 km$^2$).

PERIOD OF RECORD.--March 1924 to current year.

REVISED RECORDS.--WSP 1392: 1924-25, 1927. WSP 1922: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 532.91 ft (162.431 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 3, 1970, various nonrecording and recording gages were located within 650 ft (198 m) of present site at different datums.

REMARKS.--Records fair. Flow largely regulated by Benbrook Lake (station 08046500). Records furnished by city of Fort Worth show 3,200 acre-ft (3.95 hm$^3$) was pumped from pool behind dam during current year. Records furnished by the Benbrook Water and Sewage Authority show that 1,000 acre-ft (1.23 hm$^3$) of water was diverted from the river upstream from station for municipal use. Several observations of water temperature were made during the year. National Weather Service gage-height telemeter is located at station.

AVERAGE DISCHARGE.--28 years (water years 1925-52) prior to regulation by Benbrook Lake, 112 ft$^3$/s (3.172 m$^3$/s), 81,140 acre-ft/yr (100 hm$^3$/yr); 28 years (water years 1953-80) regulated, unadjusted, 96.4 ft$^3$/s (2.730 m$^3$/s), 69,840 acre-ft/yr (86.1 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 107,000 ft$^3$/s (3,030 m$^3$/s) May 17, 1949, gage height, 28.20 ft (8.595 m), present datum, from rating curve extended above 16,000 ft$^3$/s (453 m$^3$/s) on basis of contracted-opening measurement of 107,000 ft$^3$/s (3,030 m$^3$/s); no flow at times most years.

Maximum stage since at least 1900, 28.20 ft (8.595 m) May 17, 1949, present datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 25, 1922, reached a stage of 27.5 ft (8.38 m) present datum, discharge, 74,300 ft$^3$/s (2,100 m$^3$/s), by slope-area measurement of peak flow; data furnished by Fort Worth city engineer.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,770 ft$^3$/s (107 m$^3$/s) Oct. 15 at 1715 hours, gage height, 11.43 ft (3.484 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 24 | 1.3 | 11 | 133 | 12 | 19 | 38 | 146 | 8.9 | .00 | .00 |
| 2 | 16 | 20 | 2.0 | 10 | 132 | 12 | 332 | 215 | 139 | 7.0 | .00 | .03 |
| 3 | 15 | 21 | 3.4 | 9.8 | 129 | 12 | 179 | 42 | 139 | .00 | .00 | .07 |
| 4 | 14 | 23 | 4.1 | 9.6 | 124 | 13 | 169 | 36 | 124 | .00 | .70 | .00 |
| 5 | 14 | 25 | 5.6 | 9.0 | 123 | 13 | 163 | 34 | 141 | .00 | 1.9 | .00 |
| 6 | 14 | 24 | 5.0 | 8.9 | 125 | 14 | 160 | 96 | 144 | 2.0 | 1.3 | .00 |
| 7 | 15 | 27 | 5.0 | 8.0 | 90 | 13 | 159 | 47 | 153 | 10 | 1.0 | 28 |
| 8 | 15 | 18 | 4.7 | 7.6 | 91 | 14 | 155 | 113 | 152 | 9.8 | 7.4 | 200 |
| 9 | 14 | 10 | 3.5 | 8.9 | 51 | 15 | 156 | 41 | 149 | 6.7 | 3.3 | 26 |
| 10 | 14 | 6.9 | 3.0 | 8.1 | 38 | 16 | 157 | 36 | 142 | 6.2 | 2.9 | 14 |
| 11 | 16 | 4.5 | 2.8 | 7.4 | 56 | 17 | 159 | 34 | 140 | .70 | 2.3 | 3.8 |
| 12 | 15 | 4.7 | 172 | 6.3 | 127 | 17 | 183 | 35 | 139 | .25 | 2.0 | .00 |
| 13 | 15 | 4.8 | 31 | 6.2 | 113 | 14 | 419 | 33 | 137 | .17 | 1.6 | .00 |
| 14 | 15 | 4.4 | 14 | 6.1 | 95 | 13 | 203 | 188 | 142 | .00 | .80 | .00 |
| 15 | 456 | 4.8 | 9.3 | 6.3 | 94 | 125 | 175 | 356 | 104 | .30 | .02 | .00 |
| 16 | 69 | 4.9 | 8.1 | 6.2 | 88 | 142 | 166 | 139 | 30 | .92 | .43 | .00 |
| 17 | 29 | 3.1 | 7.6 | 6.2 | 77 | 144 | 162 | 186 | 19 | .33 | .43 | .00 |
| 18 | 23 | 3.5 | 6.8 | 6.5 | 24 | 142 | 156 | 186 | 12 | .00 | .43 | .00 |
| 19 | 20 | 2.7 | 6.0 | 6.9 | 17 | 140 | 156 | 133 | 4.0 | .00 | .43 | .00 |
| 20 | 19 | 2.9 | 3.8 | 11 | 16 | 154 | 155 | 43 | 15 | .00 | .29 | .00 |
| 21 | 18 | 8.6 | 4.7 | 73 | 14 | 155 | 150 | 113 | 1.7 | .00 | .00 | .00 |
| 22 | 31 | 4.3 | 21 | 406 | 13 | 138 | 149 | 320 | 1.5 | .00 | .00 | .00 |
| 23 | 23 | 4.0 | 328 | 60 | 49 | 39 | 150 | 298 | 2.8 | 1.2 | .00 | .00 |
| 24 | 22 | 2.8 | 46 | 35 | 49 | 20 | 254 | 160 | .85 | 6.0 | .00 | .00 |
| 25 | 22 | 3.5 | 20 | 29 | 19 | 16 | 235 | 163 | .15 | 4.9 | .00 | .29 |
| 26 | 22 | 2.9 | 13 | 25 | 11 | 17 | 169 | 161 | .05 | 4.5 | .00 | 8.8 |
| 27 | 20 | 2.1 | 9.2 | 22 | 11 | 101 | 165 | 163 | 1.4 | 40 | .00 | 129 |
| 28 | 20 | 7.7 | 41 | 20 | 12 | 184 | 161 | 159 | 2.9 | 31 | .00 | 9.6 |
| 29 | 20 | 3.5 | 37 | 32 | 12 | 79 | 157 | 148 | 22 | 21 | .00 | 354 |
| 30 | 199 | 2.1 | 17 | 27 | --- | 31 | 119 | 149 | 14 | 5.7 | .00 | 3.0 |
| 31 | 33 | --- | 12 | 49 | --- | 23 | --- | 149 | --- | .00 | .00 | --- |
| TOTAL | 1254 | 280.7 | 847.9 | 938.0 | 1933 | 1845 | 5292 | 4014 | 2218.35 | 167.57 | 27.23 | 776.59 |
| MEAN | 40.5 | 9.36 | 27.4 | 30.3 | 66.7 | 59.5 | 176 | 129 | 73.9 | 5.41 | .88 | 25.9 |
| MAX | 456 | 27 | 328 | 406 | 133 | 184 | 419 | 356 | 153 | 40 | 7.4 | 354 |
| MIN | 14 | 2.1 | 1.3 | 6.1 | 11 | 12 | 19 | 33 | .05 | .00 | .00 | .00 |
| AC-FT | 2490 | 557 | 1680 | 1860 | 3830 | 3660 | 10500 | 7960 | 4400 | 332 | 54 | 1540 |

CAL YR 1979 TOTAL 68927.19 MEAN 189 MAX 4440 MIN .99 AC-FT 136700
WTR YR 1980 TOTAL 19594.34 MEAN 53.5 MAX 456 MIN .00 AC-FT 38870

## 08048000 WEST FORK TRINITY RIVER AT FORT WORTH, TX

**LOCATION.**--Lat 32°45'39", long 97°19'56", Tarrant County, Hydrologic Unit 12030102, on left bank 125 ft (38 m) upstream from Texas Electric Service Co.'s concrete dam, 980 ft (299 m) downstream from centerline of Paddock Viaduct (North Main Street) at Fort Worth, 2,600 ft (792 m) downstream from Clear Fork Trinity River, and at mile 556.8 (895.9 km).

**DRAINAGE AREA.**--2,615 mi² (6,773 km²).

**PERIOD OF RECORD.**--October 1920 to current year. Gage-height records collected in this vicinity since 1910 are contained in reports of the National Weather Service.
Water-quality records: Chemical and biochemical analyses: October 1967 to September 1976.

**REVISED RECORDS.**--WSP 1392: 1925. WSP 1922: Drainage area.

**GAGE.**--Water-stage recorder and concrete dam control with angle-iron-crested notch for flow below 50 ft³/s (1.42 m³/s). Datum of gage is 519.24 ft (158.264 m) Texas Reclamation Department datum. Prior to Aug. 22, 1954, at site 1,200 ft (366 m) upstream at same datum. Aug. 22, 1954, to Oct. 15, 1955, at site 2,000 ft (610 m) upstream at same datum.

**REMARKS.**--Records good. Flow is largely regulated by Lake Worth on the West Fork Trinity River and by Benbrook Lake (station 08046500) on the Clear Fork Trinity River. At times, flow is sustained by releases from the flood-detention pool of Benbrook Lake. Records furnished by the city of Fort Worth show that during the year 96,420 acre-ft (119 hm³) was diverted above station and that 32,550 acre-ft (40.1 hm³) was diverted from Cedar Creek Reservoir for municipal and industrial uses. Many small diversions above station. National Weather Service and gage-height telemeter is located at station.

**AVERAGE DISCHARGE.**--60 years, 360 ft³/s (10.20 m³/s) 260,800 acre-ft/yr (322 hm³/yr), unadjusted.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 85,000 ft³/s (2,410 m³/s), Apr. 25, 1922, gage height, 23.95 ft (7.300 m), site then in use, by slope-area measurement of peak flow by city engineer of Fort Worth; maximum gage height, 25.91 ft (7.897 m) May 17, 1949, site then in use, discharge, 64,300 ft³/s (1,820 m³/s); no flow at times.
Maximum stage since at least 1866, that of May 17, 1949. Maximum stages have been affected by levee construction, levee breaks, and channel rectification.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 6,320 ft³/s (179 m³/s) Oct. 15 at 1830 hours, gage height, 3.84 ft (1.170 m); no flow July 16-24, Aug. 4-7, Aug. 27 to Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 21 | 30 | 9.7 | 19 | 178 | 21 | 25 | 217 | 157 | 13 | 1.5 | .00 |
| 2 | 20 | 25 | 8.9 | 19 | 185 | 20 | 478 | 679 | 155 | 11 | .52 | .00 |
| 3 | 21 | 24 | 8.8 | 21 | 185 | 20 | 314 | 77 | 155 | 7.2 | .07 | .00 |
| 4 | 18 | 24 | 9.5 | 21 | 185 | 22 | 168 | 55 | 140 | 3.9 | .00 | .00 |
| 5 | 17 | 23 | 11 | 20 | 186 | 22 | 177 | 53 | 147 | 2.2 | .00 | .00 |
| 6 | 16 | 23 | 11 | 19 | 193 | 22 | 177 | 95 | 146 | 1.2 | .00 | .00 |
| 7 | 17 | 25 | 11 | 17 | 166 | 21 | 174 | 92 | 141 | 1.3 | .00 | 6.6 |
| 8 | 18 | 28 | 13 | 16 | 232 | 20 | 162 | 253 | 141 | 6.2 | .27 | 235 |
| 9 | 16 | 31 | 17 | 16 | 132 | 20 | 162 | 63 | 141 | 5.2 | 1.6 | 66 |
| 10 | 15 | 18 | 20 | 18 | 98 | 20 | 169 | 43 | 141 | 4.3 | 2.5 | 29 |
| 11 | 16 | 11 | 23 | 18 | 93 | 23 | 176 | 39 | 148 | 3.6 | 4.2 | 23 |
| 12 | 19 | 9.0 | 364 | 16 | 199 | 26 | 213 | 42 | 146 | 1.9 | 5.0 | 13 |
| 13 | 18 | 9.9 | 74 | 16 | 198 | 20 | 580 | 40 | 145 | 1.0 | 5.8 | 8.4 |
| 14 | 18 | 10 | 23 | 16 | 195 | 19 | 240 | 202 | 147 | .74 | 3.7 | 9.0 |
| 15 | 850 | 9.5 | 18 | 16 | 192 | 101 | 203 | 604 | 124 | .24 | 2.4 | 9.1 |
| 16 | 188 | 9.0 | 16 | 17 | 195 | 159 | 193 | 198 | 36 | .00 | 1.6 | 9.2 |
| 17 | 38 | 9.4 | 15 | 18 | 187 | 160 | 189 | 207 | 25 | .00 | 1.6 | 8.2 |
| 18 | 28 | 9.9 | 16 | 19 | 72 | 162 | 177 | 202 | 19 | .00 | 7.1 | 8.1 |
| 19 | 23 | 11 | 16 | 20 | 41 | 162 | 177 | 164 | 15 | .00 | 4.3 | 7.4 |
| 20 | 20 | 10 | 17 | 25 | 39 | 162 | 177 | 52 | 33 | .00 | 2.7 | 7.2 |
| 21 | 18 | 17 | 17 | 243 | 37 | 155 | 177 | 116 | 20 | .00 | 2.1 | 8.7 |
| 22 | 52 | 16 | 38 | 791 | 34 | 154 | 176 | 346 | 12 | .00 | 1.3 | 8.4 |
| 23 | 28 | 12 | 671 | 119 | 131 | 54 | 173 | 343 | 10 | .00 | .92 | 7.3 |
| 24 | 24 | 11 | 105 | 45 | 170 | 32 | 255 | 195 | 9.0 | .00 | .91 | 6.7 |
| 25 | 21 | 11 | 32 | 35 | 65 | 23 | 370 | 182 | 6.3 | .22 | .60 | 15 |
| 26 | 20 | 10 | 24 | 30 | 30 | 25 | 195 | 177 | 4.5 | .52 | .05 | 34 |
| 27 | 19 | 9.7 | 18 | 26 | 27 | 131 | 185 | 170 | 3.6 | 12 | .00 | 412 |
| 28 | 19 | 11 | 95 | 25 | 26 | 322 | 193 | 166 | 2.5 | 22 | .00 | 74 |
| 29 | 19 | 12 | 88 | 43 | 26 | 112 | 193 | 157 | 7.5 | 21 | .00 | 1770 |
| 30 | 369 | 11 | 29 | 32 | --- | 40 | 171 | 155 | 18 | 11 | .00 | 126 |
| 31 | 68 | --- | 22 | 33 | --- | 29 | --- | 155 | --- | 4.8 | .00 | --- |
| TOTAL | 2054 | 470.4 | 1840.9 | 1789 | 3697 | 2279 | 6419 | 5539 | 2395.4 | 134.52 | 50.74 | 2901.30 |
| MEAN | 66.3 | 15.7 | 59.4 | 57.7 | 127 | 73.5 | 214 | 179 | 79.8 | 4.34 | 1.64 | 96.7 |
| MAX | 850 | 31 | 671 | 791 | 232 | 322 | 580 | 679 | 157 | 22 | 7.1 | 1770 |
| MIN | 15 | 9.0 | 8.8 | 16 | 26 | 19 | 25 | 39 | 2.5 | .00 | .00 | .00 |
| AC-FT | 4070 | 933 | 3650 | 3550 | 7330 | 4520 | 12730 | 10990 | 4750 | 267 | 101 | 5750 |

CAL YR 1979 TOTAL 107262.20 MEAN 294 MAX 5200 MIN 8.8 AC-FT 212800
WTR YR 1980 TOTAL 29570.26 MEAN 80.8 MAX 1770 MIN .00 AC-FT 58650

## 08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX

LOCATION.--Lat 32°45'06", long 97°17'21", Tarrant County, Hydrologic Unit 12030102, at downstream side of bridge on Beach Street, 1,700 ft (518 m) downstream from Sycamore Creek, 0.9 mi (1.4 km) downstream from Riverside Drive bridge, 2.6 mi (4.2 km) east of the Tarrant County Courthouse, and at mile 549.6 (884.3 km).

DRAINAGE AREA.--2,685 $mi^2$ (6,954 $km^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 478.70 ft (145.908 m) State Department of Highways and Public Transportation datum.

REMARKS.--Water-discharge records good. Flow is largely regulated by Lake Worth on the West Fork Trinity River and by Benbrook Lake (station 08046500) on the Clear Fork Trinity River. At times, flow is sustained by releases from the flood-detention pool of Benbrook Lake. There are many diversions upstream from this station for municipal, industrial, and other uses. For diversions by city of Fort Worth, see West Fork Trinity River at Fort Worth (station 08048000).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,800 $ft^3/s$ (532 $m^3/s$) Mar. 27, 1977, gage height, 34.27 ft (10.445 m); minimum, 0.84 $ft^3/s$ (0.024 $m^3/s$) July 25, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1866 probably occurred in May 1949, stage and discharge unknown. Maximum stages have been affected by levee construction, levee breaks, and channel rectification.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,480 $ft^3/s$ (184 $m^3/s$) Sept. 29 at 1300 hours, gage height, 17.55 ft (5.349 m); minimum daily, 2.0 $ft^3/s$ (0.057 $m^3/s$) July 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19 | 44 | 17 | 37 | 167 | 37 | 40 | 273 | 158 | 16 | 7.2 | 11 |
| 2 | 18 | 36 | 16 | 34 | 182 | 36 | 589 | 1740 | 155 | 12 | 5.1 | 13 |
| 3 | 19 | 31 | 16 | 34 | 175 | 36 | 626 | 97 | 153 | 11 | 4.8 | 14 |
| 4 | 19 | 32 | 17 | 35 | 168 | 37 | 183 | 65 | 144 | 8.3 | 5.4 | 13 |
| 5 | 17 | 31 | 17 | 33 | 169 | 36 | 185 | 56 | 146 | 5.6 | 4.8 | 11 |
| 6 | 17 | 30 | 17 | 32 | 168 | 36 | 174 | 114 | 150 | 5.0 | 6.5 | 11 |
| 7 | 17 | 31 | 17 | 31 | 157 | 36 | 172 | 165 | 148 | 4.2 | 4.7 | 20 |
| 8 | 18 | 39 | 17 | 30 | 350 | 35 | 157 | 508 | 150 | 4.6 | 4.6 | 478 |
| 9 | 19 | 43 | 20 | 29 | 189 | 34 | 158 | 105 | 152 | 7.1 | 60 | 161 |
| 10 | 17 | 30 | 24 | 31 | 146 | 35 | 161 | 64 | 152 | 6.3 | 14 | 38 |
| 11 | 17 | 21 | 27 | 32 | 126 | 33 | 163 | 56 | 153 | 4.6 | 15 | 25 |
| 12 | 20 | 17 | 718 | 30 | 195 | 34 | 215 | 68 | 151 | 3.8 | 29 | 20 |
| 13 | 21 | 18 | 141 | 28 | 197 | 33 | 1030 | 61 | 149 | 2.8 | 17 | 15 |
| 14 | 20 | 18 | 51 | 28 | 193 | 33 | 272 | 251 | 146 | 2.2 | 15 | 14 |
| 15 | 1290 | 17 | 40 | 28 | 189 | 87 | 198 | 1690 | 142 | 2.3 | 44 | 15 |
| 16 | 493 | 15 | 31 | 29 | 195 | 158 | 184 | 404 | 53 | 3.4 | 12 | 17 |
| 17 | 63 | 15 | 27 | 29 | 185 | 154 | 174 | 207 | 31 | 3.4 | 10 | 17 |
| 18 | 44 | 15 | 27 | 29 | 98 | 151 | 166 | 199 | 25 | 2.7 | 15 | 16 |
| 19 | 36 | 16 | 27 | 28 | 59 | 153 | 166 | 177 | 21 | 2.9 | 29 | 15 |
| 20 | 32 | 17 | 26 | 44 | 54 | 153 | 165 | 79 | 86 | 3.5 | 19 | 16 |
| 21 | 29 | 34 | 32 | 440 | 52 | 150 | 164 | 122 | 31 | 6.8 | 17 | 15 |
| 22 | 72 | 25 | 87 | 1500 | 48 | 149 | 164 | 305 | 19 | 5.0 | 17 | 14 |
| 23 | 41 | 19 | 1320 | 192 | 111 | 88 | 168 | 314 | 15 | 2.8 | 13 | 15 |
| 24 | 33 | 18 | 175 | 102 | 161 | 54 | 273 | 188 | 15 | 2.7 | 13 | 15 |
| 25 | 29 | 17 | 62 | 76 | 88 | 40 | 558 | 169 | 13 | 2.0 | 15 | 77 |
| 26 | 26 | 17 | 45 | 68 | 49 | 42 | 188 | 164 | 12 | 2.8 | 16 | 82 |
| 27 | 26 | 17 | 38 | 62 | 42 | 262 | 175 | 162 | 11 | 6.8 | 11 | 849 |
| 28 | 25 | 15 | 146 | 61 | 42 | 573 | 170 | 170 | 11 | 36 | 14 | 206 |
| 29 | 26 | 17 | 137 | 104 | 41 | 186 | 166 | 158 | 10 | 34 | 17 | 3890 |
| 30 | 600 | 18 | 54 | 77 | --- | 64 | 158 | 157 | 17 | 19 | 17 | 382 |
| 31 | 105 | --- | 43 | 64 | --- | 46 | --- | 159 | --- | 11 | 13 | --- |
| TOTAL | 3228 | 713 | 3432 | 3377 | 3996 | 3001 | 7362 | 8447 | 2619 | 240.6 | 485.1 | 6485 |
| MEAN | 104 | 23.8 | 111 | 109 | 138 | 96.8 | 245 | 272 | 87.3 | 7.76 | 15.6 | 216 |
| MAX | 1290 | 44 | 1320 | 1500 | 350 | 573 | 1030 | 1740 | 158 | 36 | 60 | 3890 |
| MIN | 17 | 15 | 16 | 28 | 41 | 33 | 40 | 56 | 10 | 2.0 | 4.6 | 11 |
| AC-FT | 6400 | 1410 | 6810 | 6700 | 7930 | 5950 | 14600 | 16750 | 5190 | 477 | 962 | 12860 |

CAL YR 1979 TOTAL 143861.1 MEAN 394 MAX 6320 MIN 9.1 AC-FT 285300
WTR YR 1980 TOTAL 43385.7 MEAN 119 MAX 3890 MIN 2.0 AC-FT 86060

## 08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1976 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1976 to current year.
pH: October 1976 to current year.
WATER TEMPERATURES: October 1976 to current year.
DISSOLVED OXYGEN: October 1976 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1976.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,000 micromhos Nov. 6, 1978; minimum, 142 micromhos Aug. 12, 1979.
pH: Maximum, 9.8 units Aug. 8, Sept. 2. 1980; minimum, 7.0 units Sept. 16, 1977.
WATER TEMPERATURES: Maximum, 38.0°C July 14, 16, 1978; minimum, 0.5°C Jan. 11, 19, 20, 1978, Jan. 8, 14, 1979.
DISSOLVED OXYGEN: Maximum, 19.3 mg/L Sept. 20, 1980; minimum, 0.0 mg/L on several days during 1977 and 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,580 micromhos Sept. 8; minimum, 156 micromhos Oct. 15.
pH: Maximum, 9.8 units Aug. 8, Sept. 2; minimum, 7.1 units Nov. 22, 25, Dec. 12, 17.
WATER TEMPERATURES: Maximum, 37.5°C June 27, July 7; minimum, 2.0°C Dec. 17.
DISSOLVED OXYGEN: Maximum, 19.3 mg/L Sept. 20; minimum, 0.0 mg/L on several days during August and September.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 24... | 0930 | 32 | 500 | 7.4 | 17.0 | 6.5 | 68 | 2.6 | 150 | 25 |
| NOV 16... | 0900 | 15 | 600 | 7.7 | 10.0 | 11.4 | 101 | 1.5 | 190 | 31 |
| DEC 13... | 0930 | 116 | 496 | 7.7 | 7.0 | 11.3 | 93 | 11 | 170 | 35 |
| JAN 18... | 0850 | 28 | 738 | 7.7 | 10.0 | 10.0 | 89 | 2.2 | 210 | 31 |
| FEB 14... | 1345 | 195 | 448 | 7.9 | 9.5 | 11.0 | 96 | 2.0 | 180 | 31 |
| MAR 04... | 0915 | 37 | 650 | 7.9 | 9.5 | 10.6 | 95 | 3.5 | 210 | 26 |
| APR 16... | 1600 | 189 | 445 | 7.9 | 19.5 | -- | -- | -- | 170 | 40 |
| MAY 15... | 1355 | 2550 | 210 | 7.9 | 20.0 | 7.3 | 81 | 14 | 71 | 4 |
| JUN 11... | 1150 | 152 | 400 | 8.0 | 26.0 | 6.5 | 80 | 2.5 | 140 | 13 |
| JUL 23... | 1400 | 3.1 | 870 | 9.0 | 32.5 | 18.4 | 256 | 4.2 | 160 | 15 |
| AUG 27... | 1425 | 15 | 574 | 8.8 | 31.5 | 18.1 | 245 | 1.2 | 120 | 31 |
| SEP 18... | 1340 | 14 | 610 | 8.6 | 30.0 | 17.0 | 227 | 6.7 | 150 | 18 |

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 24... | 52 | 4.3 | 36 | 1.3 | 5.7 | 150 | 0 | 65 | 33 | .4 |
| NOV 16... | 63 | 7.2 | 53 | 1.7 | 6.5 | 190 | 0 | 63 | 57 | .4 |
| DEC 13... | 60 | 5.9 | 35 | 1.2 | 5.3 | 170 | 0 | 64 | 31 | .3 |
| JAN 18... | 72 | 7.8 | 59 | 1.8 | 18 | 220 | 0 | 100 | 56 | .4 |
| FEB 14... | 62 | 5.9 | 24 | .8 | 5.3 | 180 | 0 | 43 | 28 | .4 |
| MAR 04... | 69 | 8.4 | 52 | 1.6 | 9.9 | 220 | 0 | 69 | 55 | .3 |
| APR 16... | 59 | 5.9 | 21 | .7 | 4.7 | 160 | 0 | 41 | 24 | .3 |
| MAY 15... | 25 | 2.1 | 13 | .7 | 3.7 | 82 | 0 | 20 | 14 | .2 |
| JUN 11... | 45 | 5.7 | 25 | .9 | 4.1 | 150 | 0 | 32 | 31 | .3 |
| JUL 23... | 48 | 9.7 | 110 | 3.8 | 9.5 | 140 | 18 | 79 | 130 | .7 |
| AUG 27... | 34 | 9.4 | 66 | 2.6 | 6.0 | 92 | 10 | 62 | 86 | .8 |
| SEP 18... | 47 | 8.7 | 63 | 2.2 | 8.4 | 150 | 7 | 63 | 73 | 1.0 |

## 08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) |
|---|---|---|---|---|---|---|---|---|---|
| OCT<br>24... | 5.5 | 276 | .48 | .160 | .64 | .730 | .97 | 1.7 | .150 |
| NOV<br>16... | 2.5 | 346 | .28 | .020 | .30 | .070 | .83 | .90 | .060 |
| DEC<br>13... | 4.1 | 289 | .47 | .080 | .55 | .360 | 1.3 | 1.7 | .200 |
| JAN<br>18... | 3.0 | 425 | .30 | .080 | .38 | .120 | 1.4 | 1.5 | .050 |
| FEB<br>14... | 2.7 | 260 | .39 | .030 | .42 | .390 | .71 | 1.1 | .130 |
| MAR<br>04... | 1.8 | 374 | .52 | .050 | .57 | .800 | .80 | 1.6 | .270 |
| APR<br>16... | 2.8 | 238 | .40 | .010 | .41 | .230 | .87 | 1.1 | .110 |
| MAY<br>15... | 5.2 | 124 | .46 | .040 | .50 | .340 | 2.7 | 3.0 | .130 |
| JUN<br>11... | 3.7 | 221 | .09 | .010 | .10 | .060 | 1.0 | 1.1 | .070 |
| JUL<br>23... | 7.1 | 481 | .16 | .020 | .18 | .120 | 1.9 | 2.0 | .330 |
| AUG<br>27... | 3.8 | 323 | .03 | .000 | .03 | .030 | .96 | .99 | .060 |
| SEP<br>18... | 1.8 | 347 | .02 | .050 | .07 | .880 | 1.6 | 2.5 | .580 |

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 3228 | 397 | 225 | 1960 | 26 | 226 | 39 | 336 | 140 |
| NOV. | 1979 | 713 | 583 | 330 | 635 | 56 | 108 | 59 | 113 | 180 |
| DEC. | 1979 | 3432 | 453 | 257 | 2380 | 35 | 324 | 45 | 414 | 150 |
| JAN. | 1980 | 3377 | 372 | 211 | 1920 | 25 | 227 | 36 | 330 | 130 |
| FEB. | 1980 | 3996 | 483 | 274 | 2960 | 38 | 406 | 48 | 514 | 160 |
| MAR. | 1980 | 3001 | 477 | 271 | 2190 | 38 | 306 | 47 | 382 | 160 |
| APR. | 1980 | 7362 | 393 | 223 | 4440 | 25 | 503 | 38 | 759 | 140 |
| MAY | 1980 | 8447 | 416 | 236 | 5380 | 28 | 649 | 41 | 925 | 150 |
| JUNE | 1980 | 2619 | 431 | 245 | 1730 | 30 | 214 | 42 | 298 | 150 |
| JULY | 1980 | 240.6 | 688 | 389 | 253 | 77 | 50 | 70 | 46 | 190 |
| AUG. | 1980 | 485.1 | 587 | 333 | 436 | 55 | 72 | 59 | 77 | 180 |
| SEPT | 1980 | 6485 | 317 | 180 | 3150 | 21 | 362 | 31 | 539 | 120 |
| TOTAL | | 43385.7 | ** | ** | 27400 | ** | 3450 | ** | 4730 | ** |
| WTD. AVG. | | 119 | 413 | 234 | ** | 29 | ** | 40 | ** | 150 |

## 08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | --- | --- | 470 | 450 | 406 | 428 | 674 | 640 | 652 | 494 | 464 | 479 |
| 2 | --- | --- | 480 | 410 | 404 | 408 | 692 | 648 | 666 | 502 | 486 | 494 |
| 3 | --- | --- | 490 | 442 | 404 | 428 | 700 | 662 | 685 | 532 | 502 | 522 |
| 4 | --- | --- | 500 | 524 | 434 | 471 | 722 | 692 | 703 | 632 | 528 | 594 |
| 5 | 524 | --- | 506 | 538 | 462 | 490 | 718 | 680 | 698 | 622 | 584 | 601 |
| 6 | 518 | 502 | 510 | 512 | 482 | 497 | 700 | 664 | 683 | 600 | 582 | 590 |
| 7 | 530 | 506 | 516 | 696 | 486 | 548 | 706 | 660 | 682 | 592 | 562 | 575 |
| 8 | 518 | 494 | 507 | 964 | 526 | 735 | 720 | 682 | 699 | 636 | 562 | 593 |
| 9 | 564 | 508 | 533 | 720 | 514 | 600 | 734 | 678 | 709 | 614 | 570 | 594 |
| 10 | 550 | 532 | 539 | 550 | 468 | 486 | 692 | 676 | 682 | 712 | 612 | 654 |
| 11 | 542 | 522 | 530 | 520 | 476 | 492 | 782 | 676 | 717 | 702 | 622 | 672 |
| 12 | 560 | 526 | 540 | 542 | 514 | 526 | 728 | --- | 600 | 728 | 616 | 677 |
| 13 | 550 | 522 | 534 | 624 | 542 | 569 | 542 | --- | 520 | 662 | 618 | 635 |
| 14 | 540 | 526 | 531 | 622 | 548 | 575 | 572 | 512 | 541 | 676 | 646 | 661 |
| 15 | 528 | 156 | 428 | 588 | 534 | 556 | 520 | 510 | 514 | 710 | 636 | 668 |
| 16 | 282 | 254 | 265 | 610 | 566 | 581 | 548 | 518 | 532 | 736 | 646 | 689 |
| 17 | 336 | 284 | 312 | 640 | 604 | 620 | 580 | 550 | 559 | 728 | 656 | 691 |
| 18 | 344 | 330 | 339 | 638 | 612 | 630 | 610 | 558 | 591 | 722 | 652 | 688 |
| 19 | 374 | 346 | 364 | 656 | 632 | 642 | 584 | 556 | 566 | 666 | 654 | 659 |
| 20 | 392 | 364 | 376 | 698 | 618 | 636 | 588 | 582 | 584 | 1090 | 626 | 701 |
| 21 | 408 | 364 | 390 | 1400 | 614 | 852 | 580 | 500 | 567 | 650 | 178 | 303 |
| 22 | 608 | 384 | 438 | 986 | 712 | 810 | 590 | 466 | 502 | --- | --- | 280 |
| 23 | 438 | 384 | 407 | 728 | 576 | 618 | 478 | 196 | 333 | --- | --- | 300 |
| 24 | 494 | 410 | 446 | 688 | 572 | 601 | 398 | 334 | 384 | --- | --- | 350 |
| 25 | 444 | 410 | 425 | 696 | 646 | 664 | 436 | 396 | 418 | --- | --- | 370 |
| 26 | 570 | 420 | 461 | 682 | 642 | 658 | 448 | 434 | 440 | --- | --- | 400 |
| 27 | 450 | 416 | 430 | 824 | 624 | 678 | 460 | 440 | 450 | --- | --- | 420 |
| 28 | 450 | 416 | 442 | 850 | 640 | 724 | 486 | 300 | 423 | --- | --- | 450 |
| 29 | 460 | 440 | 449 | 670 | 646 | 657 | 380 | 318 | 353 | --- | --- | 430 |
| 30 | 528 | 266 | 388 | 676 | 652 | 662 | 428 | 384 | 408 | --- | --- | 450 |
| 31 | 404 | 366 | 384 | --- | --- | --- | 470 | 428 | 447 | --- | --- | 460 |
| MONTH | 608 | 156 | 449 | 1400 | 404 | 595 | 782 | 196 | 558 | 1090 | 178 | 537 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | --- | --- | 500 | 706 | --- | 640 | 530 | 512 | 520 | --- | --- | 430 |
| 2 | 552 | 436 | 510 | --- | --- | 645 | 554 | 306 | 515 | --- | --- | 420 |
| 3 | 434 | 410 | 419 | --- | --- | 650 | 332 | 260 | 299 | --- | --- | 430 |
| 4 | 426 | 406 | 413 | --- | --- | 655 | 346 | 308 | 332 | --- | --- | 440 |
| 5 | 434 | 404 | 413 | --- | --- | 670 | 400 | 344 | 382 | --- | --- | 430 |
| 6 | 432 | 416 | 421 | --- | --- | 675 | 402 | 394 | 399 | --- | --- | 440 |
| 7 | 498 | 418 | 445 | --- | --- | 680 | 418 | 396 | 407 | --- | --- | 450 |
| 8 | 946 | 360 | 504 | --- | --- | 690 | 418 | 406 | 413 | 412 | 362 | 376 |
| 9 | 652 | 482 | 524 | --- | --- | 695 | 446 | 410 | 429 | 724 | 370 | 502 |
| 10 | 580 | 512 | 536 | --- | --- | 700 | 448 | 412 | 428 | 588 | 500 | 528 |
| 11 | 738 | 540 | 624 | 712 | 674 | 705 | 462 | 422 | 433 | 554 | 502 | 520 |
| 12 | 638 | 508 | 551 | 724 | 696 | 710 | 694 | 410 | 466 | 776 | 494 | 601 |
| 13 | 516 | 446 | 485 | 708 | 660 | 676 | 400 | 264 | 317 | 662 | 538 | 604 |
| 14 | 446 | 432 | 438 | 784 | --- | 700 | 444 | 326 | 370 | 672 | 260 | 554 |
| 15 | 436 | 426 | 431 | 564 | --- | 550 | 522 | 362 | 423 | 384 | 166 | 295 |
| 16 | 460 | 420 | 435 | 586 | 518 | 549 | 458 | 412 | 425 | 596 | 296 | 417 |
| 17 | 422 | 410 | 414 | 506 | 416 | 443 | 482 | 418 | 436 | 562 | 412 | 471 |
| 18 | 510 | 416 | 460 | 424 | 396 | 411 | 508 | 426 | 454 | 494 | 464 | 475 |
| 19 | 524 | 500 | 513 | 418 | 392 | 403 | 656 | 418 | 476 | 588 | 448 | 493 |
| 20 | 530 | 508 | 521 | 410 | 390 | 401 | 438 | 408 | 419 | 810 | 516 | 584 |
| 21 | 538 | 516 | 524 | 412 | 388 | 402 | 408 | 400 | 404 | 676 | 488 | 583 |
| 22 | 532 | 516 | 524 | 406 | 388 | 399 | 406 | 392 | 400 | 520 | 432 | 451 |
| 23 | 532 | 442 | 481 | 726 | 396 | 480 | 408 | 400 | 404 | 444 | 404 | 420 |
| 24 | 500 | 450 | 486 | 654 | 464 | 520 | 412 | 326 | 395 | 464 | 430 | 443 |
| 25 | 528 | 442 | 474 | 532 | 468 | 497 | 386 | 342 | 365 | 458 | 432 | 445 |
| 26 | 984 | 530 | 641 | 554 | 522 | 532 | 376 | 362 | 369 | 452 | 420 | 436 |
| 27 | 740 | 564 | 604 | 534 | 214 | 433 | 404 | 372 | 394 | 458 | 432 | 446 |
| 28 | 688 | 578 | 636 | --- | --- | 420 | 414 | --- | 400 | 532 | 428 | 474 |
| 29 | 670 | 552 | 629 | --- | --- | 400 | --- | --- | 410 | 466 | 420 | 445 |
| 30 | --- | --- | --- | --- | --- | 450 | --- | --- | 420 | 472 | --- | 430 |
| 31 | --- | --- | --- | 524 | 448 | 494 | --- | --- | --- | 436 | --- | 420 |
| MONTH | 984 | 360 | 502 | 784 | 214 | 557 | 694 | 260 | 410 | 810 | 166 | 466 |

## 08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | --- | --- | 420 | 598 | 514 | 549 | 594 | 558 | 580 | 646 | 606 | 624 |
| 2 | --- | --- | 430 | 586 | 532 | 567 | 612 | 354 | 575 | 636 | 618 | 626 |
| 3 | --- | --- | 420 | 586 | 558 | 572 | 612 | 576 | 598 | 668 | 640 | 650 |
| 4 | --- | --- | 430 | 604 | 556 | 575 | 616 | 582 | 601 | 836 | 686 | 800 |
| 5 | 438 | --- | 420 | 634 | 582 | 605 | 618 | 578 | 601 | 864 | 754 | 814 |
| 6 | --- | --- | 410 | 660 | 616 | 638 | 640 | 604 | 620 | 814 | 692 | 752 |
| 7 | --- | --- | 400 | 686 | 638 | 665 | 664 | 632 | 646 | 808 | 678 | 727 |
| 8 | --- | --- | 390 | 796 | 690 | 740 | 678 | 650 | 664 | 1580 | 430 | 758 |
| 9 | 400 | 380 | 389 | 906 | 802 | 855 | 822 | 510 | 647 | 448 | 430 | 442 |
| 10 | 422 | 402 | 407 | 826 | 712 | 755 | 504 | 346 | 475 | 520 | 448 | 479 |
| 11 | 410 | 386 | 398 | 726 | 696 | 708 | 496 | 460 | 483 | 500 | 476 | 483 |
| 12 | 420 | 396 | 406 | 742 | 720 | 732 | 586 | 318 | 501 | 506 | 486 | 491 |
| 13 | 428 | --- | 410 | 764 | 734 | 745 | 598 | 516 | 562 | 524 | 490 | 506 |
| 14 | --- | --- | 420 | 768 | 736 | 755 | 640 | 604 | 616 | 554 | 506 | 532 |
| 15 | --- | --- | 430 | 766 | 742 | 755 | 710 | 650 | 668 | 584 | 528 | 560 |
| 16 | 436 | --- | 420 | 772 | 760 | 765 | 608 | 526 | 551 | 660 | 576 | 616 |
| 17 | 512 | --- | 450 | 784 | 750 | 768 | 528 | 484 | 504 | 676 | 572 | 626 |
| 18 | 478 | 428 | 456 | 782 | 748 | 766 | 508 | 446 | 477 | 638 | 594 | 620 |
| 19 | 700 | 470 | 561 | 818 | 754 | 775 | 582 | 444 | 502 | 640 | 596 | 623 |
| 20 | 788 | 338 | 528 | 816 | 784 | 800 | 680 | 594 | 653 | 620 | 564 | 597 |
| 21 | 668 | 502 | 573 | 900 | 786 | 842 | 672 | 560 | 606 | 614 | 562 | 592 |
| 22 | 552 | 502 | 530 | 844 | 798 | 825 | 578 | 530 | 549 | 622 | 588 | 610 |
| 23 | 566 | 534 | 550 | 856 | 812 | 836 | 576 | 538 | 557 | 628 | 586 | 608 |
| 24 | 620 | 550 | 570 | 828 | 746 | 786 | 594 | 548 | 568 | 656 | 608 | 635 |
| 25 | --- | --- | 580 | 784 | 730 | 754 | 606 | 558 | 581 | 798 | 432 | 641 |
| 26 | --- | --- | 800 | 834 | 738 | 769 | 598 | 560 | 581 | 746 | 378 | 570 |
| 27 | 1210 | --- | 895 | 890 | 810 | 866 | 620 | 542 | 583 | 416 | 274 | 342 |
| 28 | 1030 | --- | 825 | 966 | 754 | 837 | 650 | 566 | 607 | 444 | 346 | 400 |
| 29 | 822 | 592 | 659 | 756 | 524 | 610 | 674 | 632 | 653 | 380 | 170 | 208 |
| 30 | 688 | 542 | 621 | 572 | 526 | 557 | 670 | 618 | 647 | 446 | 240 | 333 |
| 31 | --- | --- | --- | 588 | 534 | 549 | 664 | 606 | 635 | --- | --- | --- |
| MONTH | 1210 | 338 | 507 | 966 | 514 | 720 | 822 | 318 | 584 | 1580 | 170 | 576 |

### PH (STANDARD UNITS), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 8.2 | 7.3 | 7.7 | 7.4 | 7.2 | 7.3 | 7.8 | 7.3 | 7.5 | 7.7 | 7.5 | 7.6 |
| 2 | --- | --- | 7.7 | 7.5 | 7.2 | 7.4 | 7.8 | 7.3 | 7.5 | 7.7 | 7.5 | 7.6 |
| 3 | --- | --- | --- | 7.5 | 7.2 | 7.4 | 8.0 | 7.3 | 7.5 | 7.8 | 7.6 | 7.7 |
| 4 | --- | --- | --- | 7.6 | 7.2 | 7.4 | 7.9 | 7.3 | 7.5 | 7.7 | 7.5 | 7.6 |
| 5 | 8.1 | --- | 7.7 | 7.8 | 7.3 | 7.5 | 7.9 | 7.3 | 7.5 | 7.5 | 7.4 | 7.5 |
| 6 | 8.2 | 7.4 | 7.8 | 7.8 | 7.4 | 7.6 | 7.8 | 7.4 | 7.5 | 7.7 | 7.4 | 7.5 |
| 7 | 8.2 | 7.4 | 7.8 | 7.7 | 7.4 | 7.5 | 7.8 | 7.3 | 7.5 | 7.7 | 7.5 | 7.6 |
| 8 | 8.4 | 7.5 | 7.9 | 7.8 | 7.2 | 7.5 | 7.8 | 7.3 | 7.5 | 7.7 | 7.5 | 7.6 |
| 9 | 8.0 | 7.5 | 7.7 | 7.5 | 7.3 | 7.4 | 7.7 | 7.3 | 7.5 | 8.1 | 7.4 | 7.7 |
| 10 | 8.2 | 7.5 | 7.8 | 7.9 | 7.2 | 7.5 | 7.8 | 7.4 | 7.6 | 7.6 | 7.5 | 7.5 |
| 11 | 8.3 | 7.6 | 7.9 | 7.9 | 7.4 | 7.6 | 7.9 | 7.4 | 7.6 | 7.9 | 7.5 | 7.7 |
| 12 | 8.3 | 7.5 | 7.9 | 7.9 | 7.3 | 7.5 | 7.5 | 7.1 | 7.3 | 7.9 | 7.5 | 7.7 |
| 13 | 8.3 | 7.5 | 7.8 | 8.0 | 7.3 | 7.6 | 7.6 | 7.3 | 7.4 | 7.9 | 7.4 | 7.6 |
| 14 | 8.2 | 7.5 | 7.9 | 8.0 | 7.3 | 7.6 | 7.4 | 7.3 | 7.4 | 7.9 | 7.4 | 7.7 |
| 15 | 7.9 | 7.5 | 7.7 | 8.1 | 7.3 | 7.6 | 7.4 | 7.2 | 7.3 | 8.1 | 7.5 | 7.7 |
| 16 | 7.7 | 7.5 | 7.6 | 8.1 | 7.3 | 7.6 | 7.3 | 7.2 | 7.3 | 8.4 | 7.5 | 7.8 |
| 17 | 7.5 | 7.4 | 7.4 | 8.1 | 7.3 | 7.6 | 7.7 | 7.1 | 7.4 | 8.5 | 7.8 | 8.1 |
| 18 | 7.5 | 7.4 | 7.5 | 8.2 | 7.4 | 7.7 | 7.7 | 7.5 | 7.6 | 8.6 | 7.9 | 8.2 |
| 19 | 7.5 | 7.4 | 7.5 | 8.1 | 7.4 | 7.6 | 7.8 | 7.6 | 7.7 | 8.4 | 7.9 | 8.1 |
| 20 | 7.5 | 7.4 | 7.4 | 7.7 | 7.4 | 7.5 | 7.8 | 7.6 | 7.7 | 8.1 | 7.6 | 7.9 |
| 21 | 7.6 | 7.4 | 7.5 | 7.4 | 7.2 | 7.3 | 7.8 | 7.6 | 7.7 | 8.5 | 7.9 | 8.2 |
| 22 | 7.5 | 7.2 | 7.4 | 7.5 | 7.1 | 7.2 | 7.8 | 7.6 | 7.7 | --- | --- | --- |
| 23 | 7.5 | 7.3 | 7.4 | 7.6 | 7.2 | 7.4 | 8.0 | 7.6 | 7.7 | --- | --- | --- |
| 24 | 7.4 | 7.3 | 7.3 | 7.7 | 7.2 | 7.4 | 7.9 | 7.7 | 7.8 | --- | --- | --- |
| 25 | 7.5 | 7.2 | 7.3 | 7.5 | 7.1 | 7.3 | 7.7 | 7.6 | 7.6 | --- | --- | --- |
| 26 | 7.7 | 7.4 | 7.5 | 7.7 | 7.2 | 7.4 | 7.7 | 7.5 | 7.6 | --- | --- | --- |
| 27 | 7.8 | 7.5 | 7.7 | 8.0 | 7.4 | 7.6 | 7.6 | 7.5 | 7.6 | --- | --- | --- |
| 28 | 7.8 | 7.5 | 7.7 | 7.9 | 7.3 | 7.5 | 7.7 | 7.5 | 7.6 | --- | --- | --- |
| 29 | 7.8 | 7.4 | 7.7 | 7.8 | 7.3 | 7.5 | 7.7 | 7.6 | 7.6 | --- | --- | --- |
| 30 | 7.7 | 7.4 | 7.5 | 7.8 | 7.3 | 7.5 | 7.7 | 7.5 | 7.6 | --- | --- | --- |
| 31 | 7.5 | 7.3 | 7.4 | --- | --- | --- | 7.7 | 7.5 | 7.6 | --- | --- | --- |
| MONTH | 8.4 | 7.2 | 7.6 | 8.2 | 7.1 | 7.5 | 8.0 | 7.1 | 7.6 | 8.6 | 7.4 | 7.7 |

## 08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

### PH (STANDARD UNITS), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 8.2 | 8.2 | 3.1 | 8.5 | 7.8 | 8.1 | 8.6 | 7.9 | 8.2 | --- | --- | --- |
| 2 | 8.3 | 8.2 | 8.3 | 8.5 | 8.1 | 8.3 | 8.6 | 7.9 | 8.2 | --- | --- | --- |
| 3 | 8.3 | 8.2 | 8.2 | 8.6 | 8.0 | 8.2 | 8.0 | 7.9 | 7.9 | --- | --- | --- |
| 4 | 8.2 | 8.2 | 8.2 | 8.8 | 8.0 | 8.3 | 8.0 | 7.9 | 8.0 | --- | --- | --- |
| 5 | 8.3 | 8.1 | 8.2 | 8.7 | 7.9 | 8.2 | 8.1 | 7.8 | 8.0 | --- | --- | --- |
| 6 | 8.3 | 8.1 | 8.2 | 8.7 | 7.9 | 8.3 | 8.2 | 8.0 | 8.1 | --- | --- | --- |
| 7 | 8.2 | 8.0 | 8.2 | 8.8 | 7.8 | 8.2 | 8.2 | 8.0 | 8.1 | --- | --- | --- |
| 8 | 9.4 | 7.9 | 8.3 | 8.7 | 7.8 | 8.2 | 8.2 | 8.1 | 8.2 | 7.8 | 7.6 | 7.7 |
| 9 | 8.5 | 8.1 | 8.3 | --- | --- | 8.2 | 8.2 | 8.1 | 8.1 | 7.8 | 7.6 | 7.7 |
| 10 | 8.2 | 7.9 | 8.1 | --- | --- | 8.2 | 8.3 | 8.0 | 8.2 | 8.0 | 7.5 | 7.8 |
| 11 | 8.2 | 7.9 | 8.1 | 8.3 | 7.9 | 8.1 | 8.2 | 8.1 | 8.1 | 7.9 | 7.6 | 7.7 |
| 12 | 8.6 | 7.9 | 8.3 | 8.7 | --- | 8.2 | 8.2 | 7.9 | 8.1 | 7.8 | 7.6 | 7.7 |
| 13 | 8.3 | 8.2 | 8.3 | 8.7 | 7.9 | 8.3 | 8.2 | 8.0 | 8.1 | 7.8 | 7.5 | 7.6 |
| 14 | 8.4 | 8.2 | 8.2 | 8.5 | 7.8 | 8.2 | 8.1 | 7.8 | 8.0 | 7.9 | 7.5 | 7.6 |
| 15 | 8.3 | 8.2 | 8.3 | 8.5 | --- | 8.2 | 8.2 | 7.5 | 8.0 | 8.0 | 7.6 | 7.8 |
| 16 | 8.4 | 8.3 | 8.3 | 8.5 | 8.0 | 8.2 | 8.2 | 8.1 | 8.2 | 7.8 | 7.6 | 7.8 |
| 17 | 8.4 | 8.3 | 8.4 | 8.6 | 8.1 | 8.3 | 8.3 | 8.1 | 8.2 | 7.9 | 7.7 | 7.8 |
| 18 | 8.4 | 8.2 | 8.3 | 8.6 | 8.1 | 8.3 | 8.3 | 8.0 | 8.2 | 8.0 | 7.8 | 7.9 |
| 19 | 8.3 | 8.0 | 8.1 | 8.6 | 8.2 | 8.4 | 8.3 | 7.8 | 8.1 | 8.1 | 7.9 | 8.0 |
| 20 | 8.2 | 7.9 | 8.0 | 8.6 | 8.2 | 8.4 | 8.4 | 8.0 | 8.2 | 8.0 | 7.7 | 7.9 |
| 21 | 8.3 | 7.9 | 8.1 | 8.7 | 8.2 | 8.4 | 8.5 | 8.0 | 8.2 | 7.9 | 7.6 | 7.8 |
| 22 | 8.3 | 7.9 | 8.1 | 8.7 | 8.1 | 8.4 | 8.5 | 8.0 | 8.2 | 8.0 | 7.7 | 7.8 |
| 23 | 8.4 | 7.8 | 8.1 | 8.6 | 8.0 | 8.2 | 8.5 | 8.0 | 8.2 | 8.2 | 7.8 | 8.0 |
| 24 | 8.4 | 8.0 | 8.2 | 8.7 | 7.9 | 8.3 | 8.4 | 7.8 | 8.1 | 8.3 | 7.8 | 8.0 |
| 25 | 8.5 | 8.1 | 8.3 | 8.3 | 7.9 | 8.1 | 8.1 | 7.8 | 7.9 | 8.3 | 7.8 | 8.0 |
| 26 | 8.5 | 8.0 | 8.2 | 8.5 | 7.9 | 8.1 | 7.9 | 7.8 | 7.9 | 8.3 | 7.8 | 8.0 |
| 27 | 8.5 | 7.9 | 8.1 | 8.2 | 7.6 | 8.0 | 8.3 | 7.9 | 8.0 | 8.2 | 7.7 | 7.9 |
| 28 | 8.3 | 7.8 | 8.0 | 8.2 | --- | 8.0 | 8.1 | 7.9 | 8.0 | 8.2 | 7.7 | 7.9 |
| 29 | 8.1 | 7.5 | 7.8 | 8.1 | --- | 8.0 | --- | --- | --- | 8.1 | 7.7 | 7.9 |
| 30 | --- | --- | --- | 8.2 | --- | 8.0 | --- | --- | --- | 8.2 | 7.8 | 7.9 |
| 31 | --- | --- | --- | 8.5 | 7.9 | 8.1 | --- | --- | --- | 8.8 | 7.8 | 8.4 |
| MONTH | 9.4 | 7.5 | 8.0 | 8.8 | 7.6 | 8.2 | 8.6 | 7.5 | 8.1 | 8.8 | 7.5 | 7.9 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 8.8 | 7.2 | 8.5 | 9.1 | 7.7 | 8.4 | 9.4 | 7.3 | 8.2 | 9.7 | 7.4 | 8.6 |
| 2 | 8.8 | 8.0 | 8.4 | 9.1 | 7.5 | 8.2 | 9.6 | 7.3 | 8.3 | 9.8 | 7.4 | 8.6 |
| 3 | 9.0 | --- | 8.5 | 9.0 | 7.6 | 8.2 | 9.5 | 7.3 | 8.1 | 9.7 | 7.4 | 8.4 |
| 4 | --- | --- | 8.5 | 9.1 | 7.5 | 8.2 | 9.4 | 7.2 | 8.2 | 8.5 | 7.3 | 7.7 |
| 5 | --- | --- | --- | 9.3 | 7.5 | 8.2 | 9.7 | 7.2 | 8.3 | 8.8 | 7.2 | 7.8 |
| 6 | --- | --- | --- | 9.2 | 7.5 | 8.2 | 9.6 | 7.3 | 8.4 | 9.1 | 7.3 | 8.1 |
| 7 | --- | --- | --- | 9.3 | 7.4 | 8.2 | 9.7 | 7.2 | 8.4 | 8.9 | 7.4 | 8.0 |
| 8 | --- | --- | --- | 9.1 | 7.4 | 8.1 | 9.8 | 7.2 | 8.4 | 7.5 | 7.4 | 7.5 |
| 9 | 8.6 | 8.1 | 8.4 | 9.0 | 7.4 | 8.1 | 8.4 | 7.4 | 7.8 | 7.7 | 7.5 | 7.6 |
| 10 | 8.5 | 7.8 | 8.1 | 9.1 | 7.5 | 8.2 | 8.8 | 7.4 | 8.0 | 7.7 | 7.4 | 7.5 |
| 11 | 8.6 | 7.8 | 8.1 | 9.1 | 7.5 | 8.1 | 8.9 | 7.4 | 7.9 | 7.9 | 7.3 | 7.5 |
| 12 | 8.5 | 7.7 | 8.1 | 9.1 | 7.4 | 8.1 | 9.0 | 7.4 | 7.9 | 8.5 | 7.3 | 7.7 |
| 13 | 8.6 | --- | 7.9 | 9.2 | 7.3 | 8.1 | 8.7 | 7.4 | 7.8 | 9.1 | 7.3 | 8.0 |
| 14 | 8.7 | --- | 8.0 | 9.2 | 7.3 | 8.1 | 9.3 | 7.3 | 8.7 | 9.4 | 7.4 | 8.2 |
| 15 | 8.7 | --- | 8.0 | 9.3 | 7.3 | 8.1 | 7.8 | 7.3 | 7.5 | 9.4 | 7.4 | 8.2 |
| 16 | 8.5 | --- | 7.9 | 9.4 | 7.3 | 8.2 | 8.1 | 7.3 | 7.6 | 9.4 | 7.4 | 8.2 |
| 17 | 8.6 | --- | 7.9 | 9.5 | 7.3 | 8.2 | 8.6 | 7.3 | 7.8 | 9.4 | 7.4 | 8.2 |
| 18 | 8.7 | --- | 8.0 | 9.6 | 7.3 | 8.3 | 9.0 | 7.3 | 8.0 | 9.4 | 7.4 | 8.2 |
| 19 | 8.7 | 7.6 | 8.1 | 9.5 | 7.3 | 8.3 | 9.3 | 7.4 | 8.3 | 9.6 | 7.4 | 8.4 |
| 20 | 8.4 | 7.4 | 7.8 | 9.4 | 7.3 | 8.3 | 9.5 | 7.4 | 8.3 | 9.6 | 7.4 | 8.4 |
| 21 | 8.7 | 7.7 | 8.1 | 8.8 | 7.3 | 8.1 | 9.5 | 7.4 | 8.4 | 9.5 | 7.4 | 8.3 |
| 22 | 8.9 | 7.5 | 8.1 | 9.1 | 7.3 | 8.1 | 9.6 | 7.3 | 8.4 | 9.3 | 7.4 | 7.9 |
| 23 | 9.1 | 7.5 | 8.2 | 9.3 | 7.3 | 8.2 | 9.7 | 7.3 | 8.3 | 9.5 | 7.4 | 8.3 |
| 24 | 9.5 | --- | 8.0 | 9.4 | 7.3 | 8.2 | 9.7 | 7.3 | 8.5 | 9.2 | 7.4 | 8.0 |
| 25 | 9.5 | --- | 8.7 | 9.7 | 7.3 | 8.3 | 9.7 | 7.3 | 8.3 | 7.7 | 7.4 | 7.5 |
| 26 | 9.5 | 7.7 | 8.5 | 9.6 | 7.3 | 8.2 | 9.6 | 7.3 | 8.4 | 7.7 | 7.3 | 7.5 |
| 27 | 9.4 | 7.5 | 8.4 | 9.3 | 7.3 | 8.0 | 9.6 | 7.3 | 8.4 | 7.7 | 7.6 | 7.6 |
| 28 | 9.1 | 7.5 | 8.1 | 8.9 | 7.4 | 8.1 | 8.6 | 7.4 | 7.8 | 7.6 | 7.5 | 7.6 |
| 29 | 9.1 | 7.5 | 8.2 | 8.8 | 7.4 | 7.9 | 9.4 | 7.4 | 8.3 | 8.1 | 7.6 | 8.0 |
| 30 | 8.9 | 7.5 | 8.0 | 8.8 | 7.3 | 7.9 | 9.4 | 7.4 | 8.3 | 9.5 | 7.6 | 8.3 |
| 31 | --- | --- | --- | 9.1 | 7.3 | 8.0 | 9.6 | 7.3 | 8.4 | --- | --- | --- |
| MONTH | 9.5 | 7.2 | 8.2 | 9.7 | 7.3 | 8.2 | 9.8 | 7.2 | 8.2 | 9.8 | 7.2 | 8.0 |

## 08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 29.5 | 25.0 | 27.0 | 17.0 | 14.0 | 15.5 | 9.5 | 4.5 | 7.0 | 10.5 | 7.0 | 9.0 |
| 2 | 27.5 | 23.0 | 25.5 | 17.0 | 13.5 | 15.5 | 10.0 | 5.5 | 7.5 | 11.0 | 9.0 | 10.0 |
| 3 | --- | --- | 24.5 | 17.0 | 14.0 | 15.5 | 10.5 | 6.0 | 8.0 | 11.0 | 7.5 | 9.0 |
| 4 | --- | --- | 22.5 | 17.0 | 14.0 | 15.5 | 11.0 | 7.0 | 9.0 | 9.0 | 7.0 | 8.0 |
| 5 | --- | --- | 21.0 | 15.5 | 14.0 | 15.0 | 13.5 | 8.0 | 10.5 | 9.5 | 7.0 | 8.5 |
| 6 | 25.0 | 19.5 | 22.0 | 15.0 | 13.0 | 14.0 | 12.5 | 9.0 | 10.5 | 12.5 | 8.5 | 10.0 |
| 7 | 26.0 | 20.0 | 23.0 | 13.0 | 12.0 | 12.5 | 12.5 | 8.0 | 10.0 | 11.0 | 7.0 | 8.5 |
| 8 | 26.5 | 21.5 | 24.0 | 15.0 | 12.5 | 13.5 | 12.5 | 8.5 | 10.0 | 8.0 | 5.5 | 7.0 |
| 9 | 24.0 | 18.0 | 21.5 | 15.5 | 13.5 | 15.0 | 11.5 | 8.5 | 10.0 | 9.0 | 6.5 | 8.0 |
| 10 | 20.0 | 15.0 | 17.5 | 13.5 | 11.0 | 12.0 | 14.0 | 10.0 | 11.5 | 10.5 | 9.0 | 9.5 |
| 11 | 23.0 | 16.5 | 19.5 | 14.0 | 10.0 | 11.5 | 17.5 | 14.0 | 15.5 | 11.5 | 9.0 | 10.5 |
| 12 | 24.5 | 19.5 | 22.0 | 12.0 | 10.5 | 11.0 | 13.5 | --- | 10.0 | 10.5 | 7.5 | 9.0 |
| 13 | 22.5 | 20.5 | 21.5 | 13.5 | 8.5 | 11.0 | 8.5 | 7.5 | 7.5 | 11.0 | 7.5 | 9.5 |
| 14 | 21.0 | 18.5 | 20.0 | 14.0 | 9.5 | 11.5 | 8.5 | 7.5 | 8.0 | 12.5 | 9.5 | 11.0 |
| 15 | 19.5 | 18.0 | 19.0 | 15.0 | 9.5 | 12.0 | 10.0 | 7.0 | 8.5 | 14.5 | 12.0 | 13.5 |
| 16 | 23.0 | 19.0 | 20.5 | 15.0 | 10.0 | 12.5 | 9.0 | 4.5 | 7.0 | 15.0 | 13.0 | 13.5 |
| 17 | 23.5 | 21.0 | 22.0 | 15.5 | 11.5 | 14.0 | 4.5 | 2.0 | 3.5 | 14.0 | 12.0 | 13.0 |
| 18 | 24.5 | 21.5 | 23.0 | 18.0 | 14.5 | 16.0 | 6.0 | 3.0 | 4.5 | 14.0 | 11.0 | 12.5 |
| 19 | 24.0 | 21.0 | 22.5 | 19.5 | 16.5 | 17.5 | 10.0 | 6.0 | 8.0 | 13.5 | 13.0 | 13.5 |
| 20 | 25.5 | 22.0 | 23.5 | 20.0 | 19.0 | 19.5 | 12.5 | 9.0 | 10.5 | 13.5 | 11.0 | 12.5 |
| 21 | 25.5 | 22.5 | 24.0 | 19.5 | 14.5 | 17.5 | 14.0 | 11.5 | 13.0 | --- | --- | --- |
| 22 | 23.5 | 18.5 | 20.5 | 14.0 | 9.5 | 11.5 | 15.0 | 13.5 | 14.0 | --- | --- | --- |
| 23 | 20.5 | 16.0 | 18.5 | 12.5 | 8.0 | 10.0 | 14.0 | 12.0 | 12.5 | --- | --- | --- |
| 24 | 20.5 | 17.0 | 19.0 | 12.0 | 9.5 | 10.5 | 12.5 | 11.0 | 11.5 | --- | --- | --- |
| 25 | 20.5 | 17.5 | 19.0 | 14.5 | 10.0 | 12.0 | 12.5 | 9.5 | 11.0 | --- | --- | --- |
| 26 | 20.5 | 17.5 | 19.0 | 14.5 | 10.5 | 12.5 | 13.0 | 10.0 | 11.5 | --- | --- | --- |
| 27 | 21.5 | 18.0 | 19.5 | 15.0 | 11.5 | 12.5 | 13.0 | 11.5 | 12.5 | --- | --- | --- |
| 28 | 22.5 | 19.5 | 21.0 | 12.5 | 8.5 | 10.5 | 13.0 | 11.5 | 12.5 | --- | --- | --- |
| 29 | 22.0 | 19.5 | 20.5 | 9.0 | 6.0 | 7.0 | 11.5 | 10.0 | 11.0 | --- | --- | --- |
| 30 | 20.5 | 18.0 | 19.5 | 8.5 | 4.0 | 6.0 | 10.5 | 9.0 | 9.5 | --- | --- | --- |
| 31 | 18.0 | 15.5 | 17.0 | --- | --- | --- | 10.0 | 7.5 | 9.0 | --- | --- | --- |
| MONTH | 29.5 | 15.0 | 21.5 | 20.0 | 4.0 | 13.0 | 17.5 | 2.0 | 10.0 | 15.0 | 5.5 | 10.5 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 11.0 | 4.5 | 8.5 | 13.5 | 5.5 | 8.5 | 19.0 | 15.0 | 17.0 | --- | --- | --- |
| 2 | 7.0 | 4.0 | 5.5 | 7.5 | 2.5 | 5.0 | 20.5 | 17.0 | 19.0 | --- | --- | --- |
| 3 | 9.5 | 5.0 | 7.0 | 9.5 | 5.0 | 7.5 | 19.0 | 15.5 | 17.0 | --- | --- | --- |
| 4 | 10.5 | 7.0 | 8.5 | 15.5 | 9.0 | 12.0 | 19.0 | 14.5 | 16.5 | --- | --- | --- |
| 5 | 12.0 | 9.0 | 10.0 | 13.5 | 9.5 | 11.5 | 18.5 | 15.5 | 17.0 | --- | --- | --- |
| 6 | 12.0 | 8.5 | 10.0 | 14.0 | 9.0 | 12.0 | 20.5 | 15.5 | 17.5 | --- | --- | --- |
| 7 | 9.5 | 8.0 | 9.0 | 19.0 | 14.5 | 16.5 | 22.5 | 17.5 | 19.5 | --- | --- | --- |
| 8 | 8.0 | 6.0 | 7.0 | 17.5 | 13.5 | 15.0 | 20.5 | 15.5 | 18.0 | --- | --- | --- |
| 9 | 6.0 | 4.0 | 4.5 | --- | --- | --- | 21.5 | 16.5 | 18.5 | 24.0 | 18.5 | 21.0 |
| 10 | 6.5 | 3.0 | 5.0 | --- | --- | --- | 20.5 | 16.5 | 18.5 | 26.5 | 20.5 | 23.5 |
| 11 | 7.5 | 4.0 | 6.0 | --- | --- | --- | 21.5 | 17.0 | 19.0 | 27.0 | 23.0 | 25.0 |
| 12 | 8.0 | 5.0 | 6.5 | 18.5 | 13.5 | 16.0 | 17.5 | 13.0 | 14.5 | 27.5 | 23.0 | 25.5 |
| 13 | 10.0 | 6.0 | 8.0 | 17.0 | 13.5 | 15.5 | 13.0 | 9.5 | 11.0 | 25.5 | 23.5 | 24.5 |
| 14 | 10.5 | 8.5 | 9.5 | 17.5 | 12.0 | 14.5 | 14.5 | 10.0 | 12.0 | 25.0 | 22.0 | 23.0 |
| 15 | 13.0 | 9.0 | 11.5 | --- | --- | --- | 18.0 | 11.5 | 14.5 | 22.5 | 20.0 | 21.0 |
| 16 | 8.5 | 6.0 | 7.5 | 18.0 | 15.5 | 16.5 | 20.0 | 14.0 | 17.0 | 25.0 | 19.0 | 21.5 |
| 17 | 8.0 | 5.0 | 6.5 | 17.0 | 13.5 | 15.0 | 20.5 | 16.5 | 18.0 | 25.5 | 22.0 | 24.0 |
| 18 | 9.5 | 5.0 | 7.5 | 16.5 | 12.0 | 14.0 | 20.5 | 16.5 | 18.0 | 27.0 | 22.5 | 24.5 |
| 19 | 13.5 | 7.5 | 11.0 | 16.0 | 12.5 | 14.0 | 22.0 | 17.0 | 19.5 | 26.5 | 23.0 | 24.5 |
| 20 | 15.5 | 10.0 | 13.0 | 17.5 | 13.5 | 15.0 | 23.0 | 17.5 | 20.0 | 28.0 | 22.0 | 24.5 |
| 21 | 16.0 | 12.0 | 14.5 | 18.5 | 13.0 | 15.5 | 23.5 | 18.5 | 20.5 | 26.0 | 22.5 | 24.0 |
| 22 | 17.0 | 12.5 | 15.0 | 17.0 | 13.5 | 15.0 | 23.0 | 18.5 | 20.5 | 26.0 | 22.5 | 24.0 |
| 23 | 15.0 | 12.0 | 14.0 | 18.0 | 14.5 | 15.5 | 24.0 | 18.5 | 21.0 | 26.0 | 21.0 | 23.0 |
| 24 | 16.0 | 11.5 | 13.5 | 16.0 | 11.0 | 14.0 | 22.0 | 19.5 | 20.5 | 27.5 | 22.0 | 24.5 |
| 25 | 14.0 | 10.0 | 12.0 | 14.5 | 12.5 | 13.0 | 22.0 | 19.0 | 20.0 | 30.0 | 24.5 | 27.0 |
| 26 | 13.0 | 8.5 | 11.0 | 15.5 | 12.0 | 14.0 | 18.5 | 15.5 | 16.5 | 30.5 | 25.5 | 28.0 |
| 27 | 15.0 | 9.5 | 12.5 | 15.5 | 13.5 | 14.5 | 19.5 | 15.5 | 17.0 | 29.0 | 26.5 | 27.5 |
| 28 | 17.5 | 12.5 | 15.5 | --- | --- | --- | --- | --- | --- | 30.0 | 25.5 | 27.5 |
| 29 | 18.0 | 14.0 | 16.0 | --- | --- | --- | --- | --- | --- | 28.5 | 25.5 | 27.0 |
| 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 28.5 | 25.0 | 26.5 |
| 31 | --- | --- | --- | 18.0 | 13.5 | 15.5 | --- | --- | --- | 29.5 | 25.0 | 27.0 |
| MONTH | 18.0 | 3.0 | 10.0 | 19.0 | 2.5 | 13.5 | 24.0 | 9.5 | 17.5 | 30.5 | 18.5 | 24.5 |

## 08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 28.5 | 25.0 | 26.5 | 35.0 | 28.5 | 31.5 | 35.0 | 27.5 | 30.5 | 32.0 | 26.5 | 29.0 |
| 2 | 30.0 | 25.0 | 27.0 | 35.5 | 29.0 | 32.0 | 35.5 | 26.5 | 30.5 | 33.0 | 27.0 | 29.5 |
| 3 | 29.5 | 25.0 | 27.5 | 35.5 | 29.0 | 32.0 | 33.0 | 27.0 | 29.5 | 33.0 | 27.5 | 30.0 |
| 4 | 31.0 | 25.5 | 28.0 | 36.0 | 28.5 | 32.0 | 29.5 | 26.5 | 28.0 | 33.5 | 28.0 | 30.5 |
| 5 | 31.0 | 25.5 | 28.0 | 36.5 | 28.0 | 31.5 | 33.0 | 25.5 | 28.5 | 33.0 | 27.5 | 30.0 |
| 6 | --- | --- | --- | 36.5 | 28.5 | 32.0 | 34.5 | 26.5 | 30.0 | 31.0 | 26.5 | 29.0 |
| 7 | --- | --- | --- | 37.5 | 28.5 | 32.0 | 34.5 | 27.0 | 30.5 | 29.5 | 26.5 | 28.0 |
| 8 | --- | --- | --- | 36.0 | 28.5 | 32.0 | 35.0 | 27.5 | 31.0 | 27.5 | 26.0 | 27.0 |
| 9 | 28.5 | 26.5 | 28.0 | 36.5 | 29.0 | 32.5 | 30.5 | 28.0 | 29.0 | 29.5 | 26.0 | 27.5 |
| 10 | 30.0 | 24.5 | 27.0 | 36.5 | 29.0 | 32.5 | 32.5 | 27.0 | 29.0 | 31.0 | 26.5 | 28.5 |
| 11 | 29.5 | 25.5 | 27.5 | 37.0 | 29.0 | 32.5 | 30.5 | 27.5 | 28.5 | 31.5 | 27.5 | 29.0 |
| 12 | 30.0 | 25.5 | 27.5 | 37.0 | 28.5 | 32.5 | 31.5 | 27.0 | 29.5 | 32.0 | 27.0 | 29.0 |
| 13 | 30.0 | 25.0 | 27.5 | 36.5 | 28.5 | 32.0 | 33.0 | 28.5 | 30.0 | 32.0 | 26.0 | 28.5 |
| 14 | 30.0 | 24.0 | 27.0 | 36.5 | 28.0 | 31.5 | 34.5 | 27.5 | 30.5 | 32.5 | 26.0 | 29.0 |
| 15 | 31.0 | 24.5 | 27.5 | 36.0 | 28.0 | 31.5 | 30.5 | 28.0 | 29.5 | 32.5 | 26.5 | 29.5 |
| 16 | 31.5 | 26.0 | 28.5 | 37.0 | 28.0 | 32.0 | 34.0 | 26.5 | 29.5 | 31.5 | 26.5 | 28.5 |
| 17 | 31.5 | 26.5 | 29.0 | 36.5 | 28.0 | 31.5 | 33.0 | 26.5 | 29.5 | 32.0 | 25.0 | 28.0 |
| 18 | 32.5 | 27.5 | 30.0 | 37.0 | 28.0 | 32.0 | 33.0 | 27.0 | 29.5 | 32.5 | 25.5 | 28.5 |
| 19 | 33.5 | 28.0 | 31.0 | 36.5 | 28.5 | 32.0 | 32.5 | 28.0 | 30.0 | 32.5 | 25.0 | 28.0 |
| 20 | 31.5 | 27.0 | 29.0 | 36.5 | 28.5 | 32.0 | 34.0 | 27.5 | 30.5 | 30.5 | 25.0 | 27.5 |
| 21 | 33.5 | 28.0 | 30.5 | 32.0 | 29.0 | 30.5 | 35.0 | 28.0 | 31.0 | 30.0 | 25.5 | 27.5 |
| 22 | 33.5 | 29.5 | 31.0 | 36.0 | 28.5 | 31.5 | 35.5 | 29.0 | 32.0 | 28.5 | 25.0 | 26.0 |
| 23 | 35.0 | 28.5 | 31.5 | 35.5 | 26.0 | 31.0 | 36.0 | 29.0 | 32.0 | 29.5 | 25.0 | 27.5 |
| 24 | 35.0 | 29.0 | 31.5 | 36.0 | 27.5 | 31.0 | 35.5 | 28.5 | 31.5 | 29.0 | 25.0 | 26.5 |
| 25 | --- | --- | --- | 36.0 | 27.0 | 31.0 | 34.0 | --- | 31.0 | 26.0 | 25.0 | 25.5 |
| 26 | --- | --- | --- | 36.5 | 28.0 | 31.5 | 33.5 | 28.0 | 30.5 | 25.0 | 22.5 | 24.0 |
| 27 | 37.5 | 29.0 | 32.5 | 35.5 | 28.5 | 31.5 | 34.0 | 27.5 | 30.0 | 22.5 | 21.0 | 21.5 |
| 28 | 36.0 | 28.5 | 32.0 | 33.0 | 28.5 | 31.0 | 29.5 | 26.0 | 27.5 | 21.0 | 19.5 | 20.0 |
| 29 | 36.5 | 28.0 | 31.5 | 33.0 | 29.0 | 31.0 | 32.5 | 25.0 | 28.0 | 19.5 | 17.5 | 18.0 |
| 30 | 34.0 | 28.5 | 31.0 | 34.0 | 29.0 | 31.5 | 32.5 | 26.5 | 29.0 | 20.0 | 18.5 | 19.0 |
| 31 | --- | --- | --- | 34.5 | 29.0 | 31.0 | 32.0 | 26.5 | 29.0 | --- | --- | --- |
| MONTH | 37.5 | 24.0 | 29.0 | 37.5 | 26.0 | 31.5 | 36.0 | 25.0 | 30.0 | 33.5 | 17.5 | 27.0 |

### OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 9.9 | 7.6 | 8.5 | 8.1 | 6.7 | 7.4 | 16.6 | 12.8 | 14.2 | 10.3 | 9.4 | 9.8 |
| 2 | 7.6 | --- | 6.5 | 8.7 | 6.7 | 7.8 | 16.2 | 12.1 | 13.7 | 10.3 | 8.9 | 9.5 |
| 3 | --- | --- | --- | 9.0 | 6.6 | 7.9 | 15.7 | 10.6 | 12.9 | 10.8 | 8.9 | 9.9 |
| 4 | --- | --- | --- | 8.8 | 6.5 | 7.8 | 13.8 | 9.0 | 11.3 | 10.6 | 9.8 | 10.2 |
| 5 | 15.3 | --- | 10.5 | 11.2 | 6.5 | 8.6 | 13.8 | 8.8 | 10.7 | 10.6 | 9.3 | 10.0 |
| 6 | 15.3 | 8.7 | 11.6 | 12.7 | 8.2 | 10.7 | 12.1 | 7.8 | 9.5 | 10.3 | 8.8 | 9.4 |
| 7 | 14.9 | 8.6 | 11.5 | 11.7 | 8.7 | 10.4 | 12.9 | 8.3 | 9.9 | 11.4 | 8.5 | 10.0 |
| 8 | 14.7 | 7.0 | 10.8 | 11.7 | 6.9 | 9.3 | 12.2 | 7.8 | 9.3 | 11.8 | 9.9 | 10.8 |
| 9 | 10.9 | 6.6 | 9.1 | 9.3 | 6.1 | 7.6 | 11.9 | 7.9 | 9.6 | 12.1 | 9.8 | 10.8 |
| 10 | 14.5 | 8.0 | 11.0 | 13.0 | 6.7 | 9.8 | 11.3 | 8.6 | 9.7 | 10.3 | 8.7 | 9.6 |
| 11 | 14.7 | 9.6 | 11.6 | 14.6 | 9.7 | 11.8 | 9.7 | 1.5 | 6.2 | 12.3 | 8.2 | 10.3 |
| 12 | 13.2 | 7.5 | 10.2 | 14.7 | 9.8 | 11.5 | 13.0 | 3.3 | 8.3 | 13.1 | 9.1 | 11.0 |
| 13 | 12.0 | 6.0 | 8.7 | 15.9 | 9.8 | 12.3 | --- | 8.6 | 10.7 | 13.4 | 9.1 | 11.2 |
| 14 | 12.6 | 7.3 | 9.7 | 15.6 | 10.0 | 12.1 | --- | 10.3 | 10.6 | 14.0 | 8.5 | 11.1 |
| 15 | 9.4 | 6.7 | 7.9 | 16.1 | 9.7 | 12.0 | 10.8 | 10.0 | 10.4 | 13.1 | 8.0 | 10.3 |
| 16 | 7.0 | 5.3 | 6.3 | 16.1 | 9.4 | 11.8 | 10.6 | 9.9 | 10.3 | 13.2 | 7.0 | 9.7 |
| 17 | 5.5 | 5.0 | 5.2 | 15.3 | 8.5 | 11.2 | 12.1 | 10.5 | 11.4 | 14.6 | 7.7 | 11.2 |
| 18 | 5.6 | 4.9 | 5.3 | 13.9 | 7.5 | 9.8 | 11.7 | 11.0 | 11.4 | 14.5 | 8.6 | 11.4 |
| 19 | 6.4 | 5.5 | 5.9 | 13.5 | 6.6 | 8.6 | 11.3 | 10.3 | 10.8 | 11.9 | 7.5 | 9.6 |
| 20 | 6.8 | 5.7 | 6.1 | 10.1 | 6.4 | 7.9 | 10.6 | 9.1 | 9.9 | 9.1 | 6.4 | 7.8 |
| 21 | 6.9 | 5.6 | 6.1 | 6.1 | 3.9 | 4.9 | 10.3 | 8.1 | 9.2 | --- | --- | --- |
| 22 | 6.6 | 3.0 | 5.5 | 8.9 | 2.2 | 5.3 | 9.0 | 7.0 | 8.0 | --- | --- | --- |
| 23 | 6.6 | 5.5 | 6.1 | 12.0 | 6.3 | 9.5 | 9.7 | 7.3 | 9.0 | --- | --- | --- |
| 24 | 7.4 | 5.6 | 6.4 | 14.0 | 3.9 | 10.5 | 9.7 | 9.1 | 9.4 | --- | --- | --- |
| 25 | 8.2 | 5.9 | 7.0 | 11.1 | 2.4 | 7.0 | 9.5 | 8.8 | 9.2 | --- | --- | --- |
| 26 | 10.1 | 7.0 | 8.4 | 13.9 | 9.0 | 11.1 | 9.4 | 8.6 | 9.0 | --- | --- | --- |
| 27 | 11.5 | 7.8 | 9.5 | 15.3 | 9.4 | 12.1 | 8.9 | 8.2 | 8.5 | --- | --- | --- |
| 28 | 11.8 | 7.9 | 9.8 | 15.7 | 8.7 | 11.8 | 9.4 | 7.9 | 8.5 | --- | --- | --- |
| 29 | 11.1 | 8.1 | 9.8 | 15.5 | 11.6 | 13.3 | 9.4 | 9.1 | 9.2 | --- | --- | --- |
| 30 | 8.1 | 6.2 | 7.0 | 15.9 | 12.7 | 13.8 | 9.9 | 9.1 | 9.5 | --- | --- | --- |
| 31 | 7.6 | 6.7 | 7.1 | --- | --- | --- | 10.4 | 9.4 | 9.8 | --- | --- | --- |
| MONTH | 15.3 | 3.0 | 8.2 | 16.1 | 2.2 | 9.9 | 16.6 | 1.5 | 10.0 | 14.6 | 6.4 | 10.2 |

## 08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

### OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 12.6 | --- | --- | 12.9 | 4.6 | 8.2 | 12.7 | 7.4 | 9.9 | --- | --- | --- |
| 2 | 12.7 | 11.8 | 12.3 | 13.9 | 9.5 | 11.3 | 13.2 | --- | 9.3 | --- | --- | --- |
| 3 | 12.1 | 10.9 | 11.5 | 13.8 | 9.4 | 11.2 | 8.2 | 7.2 | 7.8 | --- | --- | --- |
| 4 | 10.9 | 10.4 | 10.7 | 13.8 | 7.8 | 10.4 | 8.8 | 7.2 | 8.0 | --- | --- | --- |
| 5 | 11.0 | 10.2 | 10.5 | 13.7 | 6.6 | 9.9 | 9.2 | 7.6 | 8.3 | --- | --- | --- |
| 6 | 11.1 | 10.1 | 10.5 | 12.8 | 7.5 | 9.8 | 8.7 | 7.7 | 8.1 | --- | --- | --- |
| 7 | 10.8 | 10.0 | 10.3 | 12.0 | 5.5 | 8.4 | 8.7 | 7.5 | 8.0 | --- | --- | --- |
| 8 | 11.2 | 9.0 | 10.4 | 9.7 | 4.9 | 7.1 | 9.0 | 7.8 | 8.4 | --- | --- | --- |
| 9 | 11.7 | 11.2 | 11.4 | 9.4 | 5.9 | 7.8 | 9.1 | 7.6 | 8.3 | 9.0 | 6.4 | 7.6 |
| 10 | 11.7 | 10.8 | 11.4 | --- | --- | --- | 9.2 | 7.2 | 8.2 | 10.0 | 5.6 | 7.7 |
| 11 | 11.2 | 10.6 | 10.9 | 11.2 | 3.7 | 6.4 | 8.7 | 7.4 | 7.9 | 9.3 | 5.7 | 7.4 |
| 12 | 11.5 | 10.6 | 11.1 | 14.5 | 7.7 | 10.7 | 8.7 | 7.4 | 8.1 | 7.4 | 5.1 | 6.1 |
| 13 | 12.0 | 10.7 | 11.2 | 15.4 | 7.6 | 11.9 | 10.0 | 8.5 | 9.5 | 5.8 | 3.8 | 4.6 |
| 14 | 11.1 | 10.1 | 10.7 | 15.8 | 12.0 | 13.7 | 9.9 | 9.1 | 9.6 | 5.9 | 2.8 | 4.5 |
| 15 | 11.1 | 8.3 | 9.9 | 13.5 | 11.9 | 12.8 | 9.9 | 8.3 | 9.3 | 7.3 | 5.3 | 6.0 |
| 16 | 11.2 | 8.3 | 10.3 | 14.3 | 11.3 | 12.9 | 9.7 | 7.9 | 8.8 | 6.8 | 6.2 | 6.6 |
| 17 | 12.4 | 10.7 | 11.6 | 12.4 | 8.9 | 10.4 | 9.6 | 7.5 | 8.4 | 7.0 | 5.9 | 6.5 |
| 18 | 12.0 | 10.3 | 11.2 | 11.3 | 8.6 | 9.7 | 9.7 | 7.2 | 8.3 | 7.4 | 6.2 | 6.7 |
| 19 | 11.4 | 9.2 | 10.3 | 11.3 | 8.7 | 9.8 | 10.5 | 7.0 | 8.6 | 7.9 | 6.3 | 7.0 |
| 20 | 11.9 | 8.7 | 10.1 | 11.0 | 8.7 | 9.6 | 10.7 | 7.2 | 8.8 | 8.3 | 6.4 | 7.2 |
| 21 | 12.0 | 8.1 | 9.8 | 11.8 | 8.6 | 9.9 | 10.8 | 7.0 | 8.7 | 8.4 | 6.3 | 7.3 |
| 22 | 12.1 | 7.9 | 9.7 | 11.4 | 8.8 | 10.0 | 10.7 | 6.9 | 8.6 | 8.4 | 6.8 | 7.6 |
| 23 | 11.7 | 7.2 | 9.4 | 10.9 | 8.8 | 9.3 | 11.0 | 7.0 | 8.7 | 8.9 | 7.1 | 7.9 |
| 24 | 11.4 | 8.4 | 9.6 | 12.3 | 7.9 | 9.9 | 9.7 | 6.3 | 8.1 | 9.0 | 6.6 | 7.6 |
| 25 | 12.6 | 8.9 | 10.3 | 11.2 | 8.9 | 9.8 | 8.5 | 7.1 | 7.8 | 9.1 | 5.8 | 7.2 |
| 26 | 13.2 | 8.5 | 10.7 | 12.8 | 8.3 | 10.3 | 8.6 | 7.0 | 7.9 | 8.2 | 5.0 | 6.4 |
| 27 | 13.4 | 8.2 | 10.5 | 9.4 | 6.9 | 8.1 | 10.2 | 7.9 | 9.0 | 4.6 | 3.0 | 3.8 |
| 28 | 11.5 | 6.2 | 8.7 | 9.7 | 7.8 | 8.6 | --- | --- | --- | 3.0 | 2.0 | 2.5 |
| 29 | 9.3 | 1.6 | 5.6 | --- | 7.3 | 8.7 | --- | --- | --- | 2.0 | 1.3 | 1.6 |
| 30 | --- | --- | --- | 10.7 | 8.6 | 9.9 | --- | --- | --- | 2.9 | 1.1 | 2.0 |
| 31 | --- | --- | --- | 13.5 | 8.4 | 11.5 | --- | --- | --- | 3.2 | 1.6 | 2.2 |
| MONTH | 13.4 | 1.6 | 10.4 | 15.8 | 3.7 | 9.9 | 13.2 | 6.3 | 8.5 | 10.0 | 1.1 | 5.8 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | --- | --- | --- | 16.9 | 7.3 | 12.1 | 7.7 | .3 | 4.1 | 14.8 | .7 | 7.6 |
| 2 | --- | --- | --- | 15.2 | 7.7 | 11.0 | --- | --- | --- | 15.8 | .7 | 7.6 |
| 3 | --- | --- | --- | 14.9 | 5.1 | 9.8 | --- | --- | --- | 15.9 | 1.4 | 7.9 |
| 4 | --- | --- | --- | 16.8 | 4.4 | 9.7 | --- | --- | --- | 13.3 | .1 | 5.8 |
| 5 | --- | --- | --- | 18.4 | 4.0 | 10.0 | --- | --- | --- | 15.2 | .1 | 6.7 |
| 6 | --- | --- | --- | 18.4 | 4.0 | 10.3 | --- | --- | --- | 15.7 | .1 | 7.2 |
| 7 | --- | --- | --- | 19.0 | 3.8 | 10.0 | --- | --- | --- | 12.9 | .1 | 5.7 |
| 8 | --- | --- | --- | 17.9 | 3.5 | 9.8 | --- | --- | --- | 6.8 | .0 | 5.1 |
| 9 | 11.2 | 7.8 | 9.8 | 16.8 | 5.4 | 10.1 | --- | --- | --- | 6.2 | --- | 5.0 |
| 10 | 11.7 | 5.5 | 8.0 | 16.2 | 4.5 | 9.2 | --- | --- | --- | 7.1 | 2.1 | 4.0 |
| 11 | 11.9 | 4.4 | 7.7 | 16.1 | 4.0 | 8.7 | --- | --- | --- | 8.4 | 1.1 | 4.1 |
| 12 | 8.3 | 3.3 | 7.0 | 16.1 | 3.5 | 8.5 | --- | --- | --- | 10.8 | 1.1 | 5.0 |
| 13 | 9.0 | --- | 7.1 | 16.2 | 3.1 | 8.4 | --- | --- | --- | 14.0 | .3 | 6.0 |
| 14 | 9.7 | --- | 7.4 | 16.4 | 2.9 | 8.5 | 16.0 | --- | 5.1 | 16.8 | .8 | 7.2 |
| 15 | 9.9 | --- | 8.0 | 16.6 | 2.9 | 8.7 | 8.3 | .0 | 3.1 | 17.6 | .9 | 7.8 |
| 16 | 9.0 | --- | 7.8 | 17.2 | 3.1 | 9.1 | 11.7 | .0 | 4.6 | 17.7 | .4 | 7.3 |
| 17 | 9.7 | --- | 8.0 | 14.6 | 1.9 | 7.6 | 15.6 | .0 | 6.4 | 18.4 | .0 | 7.3 |
| 18 | 12.8 | 1.5 | 7.6 | 15.9 | .7 | 7.8 | 16.8 | .0 | 6.9 | 19.0 | .0 | 7.3 |
| 19 | 12.8 | 5.7 | 8.8 | 19.1 | .6 | 8.7 | 15.6 | .2 | 7.6 | 18.9 | .1 | 7.5 |
| 20 | 10.4 | 2.7 | 6.1 | 18.1 | .5 | 8.2 | 16.6 | .1 | 8.0 | 19.3 | .0 | 7.7 |
| 21 | 14.6 | 4.7 | 9.2 | 13.9 | .5 | 5.4 | 15.5 | .5 | 7.0 | 18.9 | .7 | 8.5 |
| 22 | 15.3 | 6.5 | 10.6 | 18.0 | .2 | 6.6 | 13.7 | .5 | 6.2 | 18.1 | .8 | 5.8 |
| 23 | 16.7 | 7.9 | 11.5 | 18.7 | .1 | 8.1 | 16.0 | .0 | 6.8 | 18.7 | .7 | 8.1 |
| 24 | 13.6 | 8.3 | 10.5 | 18.6 | .2 | 7.4 | 15.4 | .0 | 6.7 | 18.4 | .5 | 6.8 |
| 25 | 11.4 | 6.7 | 8.8 | 17.7 | .1 | 8.3 | 15.9 | .0 | 6.4 | 6.3 | .2 | 3.2 |
| 26 | 13.2 | 8.8 | 10.6 | 15.4 | .1 | 5.5 | 16.4 | .9 | 8.1 | 5.2 | .0 | 2.7 |
| 27 | 14.3 | 8.6 | 11.1 | 13.3 | .2 | 5.7 | 17.0 | .2 | 8.1 | 6.6 | 5.1 | 6.0 |
| 28 | 13.3 | 6.2 | 9.4 | 8.0 | 1.2 | 5.1 | 10.2 | .2 | 4.1 | 6.3 | 5.4 | 5.7 |
| 29 | 14.3 | 5.8 | 9.7 | 14.5 | 4.6 | 9.1 | 16.7 | .8 | 7.8 | 8.1 | 5.6 | 7.8 |
| 30 | 13.4 | 5.6 | 10.1 | 13.9 | 1.5 | 8.0 | 16.4 | 1.9 | 8.7 | 7.8 | 5.9 | 7.0 |
| 31 | --- | --- | --- | 12.3 | .8 | 7.9 | 15.6 | .8 | 8.1 | --- | --- | --- |
| MONTH | 16.7 | 1.5 | 8.9 | 19.1 | .1 | 8.5 | 17.0 | .0 | 6.5 | 19.3 | .0 | 6.4 |

## 08049200 LAKE ARLINGTON AT ARLINGTON, TX

LOCATION.--Lat 32°42'58", long 97°11'32", Tarrant County, Hydrologic Unit 12030102, in new pumphouse at right end of Arlington Dam on Village Creek near western boundary of Arlington, 1.5 mi (2.4 km) upstream from The Texas and Pacific Railway Co. bridge, and 7 mi (11 km) upstream from mouth.

DRAINAGE AREA.--143 mi$^2$ (370 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1957 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 9, 1957, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by a rolled earthfill dam 6,482 ft (1,976 m) long. The service spillway is a 10-foot-diameter (3 m) uncontrolled circular drop inlet. The emergency spillway is an 882-foot-wide (269 m) cut through natural ground near the right end of dam. The dam was completed and storage began Mar. 31, 1957. Capacities are based on a 1955 survey. The dam was built by city of Arlington to impound water for municipal and industrial uses. Records furnished by the Tarrant County Water Control and Improvement District No. 1 show that 51,310 acre-ft (63.3 hm$^3$) was diverted from Cedar Creek Reservoir (station 08063010) into Lake Arlington during the current year. Water is circulated for cooling purposes from lake to generating plant of Texas Electric Service Co. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam........................................................ | 572.0 | - |
| Crest of spillway................................................. | 559.7 | 70,140 |
| Crest of drop inlet (top of conservation pool)....................... | 550.0 | 45,710 |
| Lowest gated outlet (invert)...................................... | 505.0 | 180 |

COOPERATION.--Records of diversions furnished by city of Arlington, Texas Electric Service Co., and Tarrant County Water Control and Improvement District No. 1. Capacity table furnished by Freese and Nichols, Inc., Consulting Engineers, for the city of Arlington.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 60,580 acre-ft (74.7 hm$^3$) May 4, 1979, elevation, 556.20 ft (169.530 m); minimum since lake first filled in April 1957, 18,110 acre-ft (22.3 hm$^3$) Oct. 17, 1971, elevation, 534.27 ft (162.845 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 49,080 acre-ft (60.5 hm$^3$) May 16 at 0500 hours, elevation, 551.50 ft (168.097 m); minimum, 23,430 acre-ft (28.9 hm$^3$) Sept. 7, elevation, 538.07 ft (164.004 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 538.0 | 23,320 | 550.0 | 45,710 |
| 542.0 | 29,950 | 552.0 | 50,240 |
| 546.0 | 37,390 | | |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36290 | 32560 | 31020 | 34890 | 36300 | 36340 | 39480 | 42930 | 44300 | 36890 | 29110 | 23920 |
| 2 | 36090 | 32520 | 31130 | 34870 | 36250 | 36480 | 40010 | 43370 | 44230 | 36520 | 28970 | 23750 |
| 3 | 35840 | 32400 | 31220 | 34850 | 36230 | 36610 | 40610 | 43260 | 44080 | 36170 | 28880 | 23660 |
| 4 | 35650 | 32290 | 31360 | 34850 | 36170 | 36560 | 40810 | 43160 | 43820 | 35840 | 28760 | 23630 |
| 5 | 35440 | 32200 | 31490 | 34870 | 36150 | 36580 | 41020 | 43070 | 43560 | 35540 | 28730 | 23580 |
| 6 | 35250 | 32100 | 31610 | 34890 | 36150 | 36580 | 41180 | 43090 | 43390 | 35210 | 28490 | 23490 |
| 7 | 35040 | 32070 | 31690 | 34890 | 36130 | 36690 | 41310 | 42950 | 43120 | 34910 | 28310 | 23470 |
| 8 | 34890 | 32070 | 31780 | 34830 | 36230 | 36810 | 41370 | 43200 | 42880 | 34570 | 28140 | 23570 |
| 9 | 34720 | 31990 | 31890 | 34760 | 36290 | 36910 | 41490 | 43050 | 42710 | 34230 | 27970 | 23750 |
| 10 | 34570 | 31890 | 32010 | 34700 | 36270 | 36830 | 41540 | 42950 | 42480 | 33890 | 27850 | 23840 |
| 11 | 34400 | 31780 | 32100 | 34570 | 36230 | 36690 | 41600 | 42860 | 42210 | 33550 | 27730 | 23920 |
| 12 | 34270 | 31630 | 32760 | 34570 | 36150 | 36580 | 41790 | 42780 | 41930 | 33200 | 27580 | 23910 |
| 13 | 34060 | 31560 | 32930 | 34590 | 36130 | 36630 | 42460 | 42650 | 41660 | 33020 | 27410 | 23860 |
| 14 | 33890 | 31510 | 33040 | 34620 | 36210 | 36750 | 42650 | 42950 | 41350 | 32820 | 27190 | 23890 |
| 15 | 34060 | 31470 | 33170 | 34680 | 36190 | 36870 | 42730 | 48460 | 41080 | 32500 | 26970 | 23800 |
| 16 | 34020 | 31400 | 33200 | 34660 | 36250 | 37000 | 42780 | 48510 | 40790 | 32230 | 26790 | 23770 |
| 17 | 33930 | 31310 | 33310 | 34680 | 36270 | 37080 | 42760 | 47630 | 40540 | 31940 | 26600 | 23810 |
| 18 | 33910 | 31250 | 33390 | 34720 | 36190 | 37200 | 42800 | 47010 | 40260 | 31700 | 26420 | 23870 |
| 19 | 33800 | 31200 | 33420 | 34720 | 36230 | 37330 | 42800 | 46600 | 39990 | 31490 | 26170 | 23870 |
| 20 | 33650 | 31160 | 33350 | 34760 | 36190 | 37470 | 42760 | 46290 | 39930 | 31340 | 26040 | 23860 |
| 21 | 33420 | 31130 | 33530 | 35100 | 36090 | 37590 | 42650 | 46110 | 39750 | 31160 | 25820 | 23830 |
| 22 | 33350 | 30970 | 33700 | 36560 | 36000 | 37710 | 42480 | 45930 | 39580 | 31060 | 25630 | 23830 |
| 23 | 33260 | 30880 | 34570 | 36630 | 35880 | 37940 | 42400 | 45800 | 39360 | 30910 | 25460 | 23840 |
| 24 | 33150 | 30750 | 34590 | 36590 | 35900 | 38000 | 42710 | 45670 | 39100 | 30640 | 25270 | 23780 |
| 25 | 33050 | 30640 | 34530 | 36520 | 35860 | 38180 | 42880 | 45510 | 38800 | 30360 | 25030 | 23870 |
| 26 | 33020 | 30680 | 34590 | 36460 | 36020 | 38380 | 42780 | 45340 | 38520 | 30070 | 24790 | 24110 |
| 27 | 32830 | 30700 | 34680 | 36400 | 36060 | 38880 | 42690 | 45190 | 38160 | 29910 | 24550 | 24490 |
| 28 | 32670 | 30770 | 34810 | 36380 | 36150 | 39120 | 42590 | 45060 | 37810 | 29790 | 24390 | 24690 |
| 29 | 32600 | 30840 | 34910 | 36400 | 36250 | 39400 | 42610 | 44880 | 37530 | 29600 | 24340 | 28260 |
| 30 | 32720 | 30910 | 34950 | 36360 | --- | 39420 | 42730 | 44660 | 37200 | 29350 | 24220 | 28740 |
| 31 | 32630 | --- | 34970 | 36380 | --- | 39560 | --- | 44470 | --- | 29230 | 24090 | --- |
| MAX | 36290 | 32560 | 34970 | 36630 | 36300 | 39560 | 42880 | 48510 | 44300 | 36890 | 29110 | 28740 |
| MIN | 32600 | 30640 | 31020 | 34570 | 35860 | 36340 | 39480 | 42650 | 37200 | 29230 | 24090 | 23470 |
| (†) | 543.49 | 542.54 | 544.74 | 545.48 | 545.41 | 547.09 | 548.62 | 549.43 | 545.90 | 541.59 | 538.50 | 541.31 |
| (‡) | -3870 | -1720 | +4060 | +1410 | -130 | +3310 | +3170 | +1740 | -7270 | -7970 | -5140 | +4650 |
| (††) | 3920 | 2850 | 2780 | 2750 | 2600 | 3100 | 3240 | 3420 | 5880 | 7790 | 7520 | 5460 |

CAL YR 1979 MAX 57050 MIN 30640 ‡ +3410 †† 42730
WTR YR 1980 MAX 48510 MIN 23470 ‡ -7760 †† 51310

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal and industrial use.

## 08049200 LAKE ARLINGTON AT ARLINGTON, TX--Continued

### WATER-QUALITY RECORDS

**PERIOD OF RECORD.**--Chemical and biochemical analyses: October 1969 to current year.

### 324304097113601 LAKE ARLINGTON SITE AC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | | |
| 05... | 1250 | 1.0 | 284 | 8.0 | 10.0 | .80 | 10.2 | 91 | 100 | 3 |
| 05... | 1252 | 10 | 284 | 8.0 | 10.0 | -- | 10.2 | 91 | -- | -- |
| 05... | 1253 | 20 | 284 | 8.0 | 10.0 | -- | 10.2 | 91 | -- | -- |
| 05... | 1254 | 30 | 284 | 8.0 | 10.0 | -- | 10.0 | 89 | -- | -- |
| 05... | 1255 | 43 | 284 | 7.9 | 9.5 | -- | 9.5 | 84 | 100 | 4 |
| MAY | | | | | | | | | | |
| 05... | 1400 | 1.0 | 300 | 8.4 | 26.0 | .80 | 8.9 | 111 | 110 | 13 |
| 05... | 1402 | 10 | 300 | 8.2 | 24.0 | -- | 8.4 | 101 | -- | -- |
| 05... | 1404 | 20 | 305 | 7.9 | 20.5 | -- | 6.4 | 72 | -- | -- |
| 05... | 1408 | 30 | 317 | 7.6 | 18.0 | -- | 2.4 | 26 | -- | -- |
| 05... | 1410 | 35 | 324 | 7.5 | 17.0 | -- | .8 | 8 | -- | -- |
| 05... | 1412 | 42 | 324 | 7.5 | 17.0 | -- | .4 | 4 | 120 | 11 |
| AUG | | | | | | | | | | |
| 18... | 1315 | 1.0 | 319 | 8.0 | 30.5 | 1.00 | 6.6 | 89 | 110 | 9 |
| 18... | 1317 | 10 | 319 | 8.0 | 30.5 | -- | 6.5 | 88 | -- | -- |
| 18... | 1319 | 20 | 319 | 8.0 | 30.5 | -- | 6.5 | 88 | -- | -- |
| 18... | 1321 | 29 | 319 | 8.0 | 30.0 | -- | 6.0 | 80 | 110 | 11 |

| DATE | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 34 | 3.9 | 16 | .7 | 4.2 | 120 | 0 | 27 | 15 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 34 | 4.2 | 16 | .7 | 4.2 | 120 | 0 | 27 | 15 |
| MAY | | | | | | | | | |
| 05... | 35 | 4.7 | 17 | .7 | 3.9 | 110 | 2 | 27 | 15 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 39 | 4.8 | 17 | .7 | 4.0 | 130 | 0 | 28 | 15 |
| AUG | | | | | | | | | |
| 18... | 35 | 4.9 | 19 | .8 | 4.9 | 120 | 0 | 29 | 20 |
| 18... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 18... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 18... | 36 | 4.7 | 19 | .8 | 4.7 | 120 | 0 | 29 | 20 |

## LAKE ARLINGTON AT ARLINGTON, TX--Continued

### 324304097113601 LAKE ARLINGTON SITE AC--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | .2 | 1.9 | 161 | .10 | .46 | .56 | .020 | <10 | <1 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | .13 | .56 | .69 | .020 | 20 | 0 |
| 05... | -- | 2.0 | 162 | .08 | .59 | .67 | .030 | 20 | 40 |
| MAY | | | | | | | | | |
| 05... | .2 | 1.5 | 161 | .03 | .99 | 1.0 | .010 | <10 | 2 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | .08 | .83 | .91 | .010 | 40 | 10 |
| 05... | -- | -- | -- | .29 | .98 | 1.3 | .010 | 40 | 40 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | 3.3 | 176 | .37 | .74 | 1.1 | .020 | 50 | 420 |
| AUG | | | | | | | | | |
| 18... | .3 | 4.0 | 176 | .00 | .49 | .49 | .030 | <10 | 2 |
| 18... | -- | -- | -- | .00 | .65 | .65 | .020 | 10 | 0 |
| 18... | -- | -- | -- | .00 | .63 | .63 | .020 | 10 | 0 |
| 18... | -- | 4.1 | 177 | .00 | .45 | .45 | .020 | <10 | 20 |

### 324320097121101 LAKE ARLINGTON SITE AL

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 05... | 1315 | 1.0 | 284 | 8.0 | 9.5 | 10.2 | 90 |
| 05... | 1316 | 10 | 284 | 8.0 | 9.5 | 10.1 | 89 |
| 05... | 1317 | 20 | 284 | 8.0 | 9.5 | 10.0 | 88 |
| 05... | 1318 | 32 | 284 | 8.0 | 9.5 | 9.8 | 87 |
| MAY | | | | | | | |
| 05... | 1420 | 1.0 | 300 | 8.3 | 26.0 | 9.0 | 112 |
| 05... | 1422 | 10 | 300 | 8.2 | 24.0 | 8.2 | 99 |
| 05... | 1424 | 20 | 305 | 7.9 | 20.5 | 6.3 | 71 |
| 05... | 1426 | 30 | 318 | 7.6 | 18.0 | 2.8 | 30 |
| AUG | | | | | | | |
| 18... | 1250 | 1.0 | 319 | 8.0 | 30.0 | 6.3 | 84 |
| 18... | 1252 | 10 | 319 | 8.0 | 30.0 | 6.2 | 83 |
| 18... | 1254 | 20 | 319 | 7.9 | 30.0 | 6.2 | 83 |
| 18... | 1256 | 24 | 319 | 7.9 | 30.0 | 6.1 | 81 |

### 324253097121801 LAKE ARLINGTON SITE BC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 05... | 1325 | 1.0 | 284 | 8.0 | 10.0 | 10.2 | 91 |
| 05... | 1326 | 10 | 284 | 8.0 | 10.0 | 10.2 | 91 |
| 05... | 1327 | 20 | 284 | 8.0 | 10.0 | 10.2 | 91 |
| 05... | 1328 | 30 | 284 | 8.0 | 9.5 | 10.1 | 89 |
| 05... | 1329 | 38 | 284 | 8.0 | 9.5 | 10.0 | 88 |
| MAY | | | | | | | |
| 05... | 1435 | 1.0 | 300 | 8.4 | 25.5 | 8.8 | 109 |
| 05... | 1436 | 10 | 300 | 8.3 | 22.5 | 8.3 | 97 |
| 05... | 1437 | 20 | 308 | 7.8 | 20.0 | 5.3 | 59 |
| 05... | 1438 | 30 | 319 | 7.6 | 17.5 | 1.8 | 19 |
| 05... | 1439 | 40 | 325 | 7.6 | 17.0 | .4 | 4 |
| AUG | | | | | | | |
| 18... | 1410 | 1.0 | 319 | 8.0 | 30.5 | 6.6 | 89 |
| 18... | 1412 | 10 | 319 | 8.0 | 30.5 | 6.3 | 85 |
| 18... | 1414 | 20 | 319 | 7.9 | 30.0 | 5.8 | 77 |
| 18... | 1416 | 25 | 323 | 7.4 | 29.5 | 3.0 | 39 |
| 18... | 1418 | 31 | 355 | 7.1 | 25.0 | .1 | 1 |

## LAKE ARLINGTON AT ARLINGTON, TX--Continued

### 324301097123301 LAKE ARLINGTON SITE BL

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 05... | 1335 | 1.0 | 284 | 8.1 | 10.5 | 10.2 | 93 |
| 05... | 1336 | 10 | 284 | 8.0 | 10.0 | 10.2 | 91 |
| 05... | 1337 | 20 | 284 | 8.0 | 10.0 | 10.2 | 91 |
| 05... | 1338 | 30 | 284 | 8.0 | 9.5 | 10.0 | 88 |
| MAY | | | | | | | |
| 05... | 1445 | 1.0 | 302 | 8.3 | 26.0 | 8.8 | 110 |
| 05... | 1446 | 10 | 302 | 8.3 | 22.5 | 8.1 | 94 |
| 05... | 1448 | 20 | 310 | 7.7 | 20.0 | 4.7 | 52 |
| 05... | 1450 | 32 | 322 | 7.5 | 18.0 | 1.2 | 13 |
| AUG | | | | | | | |
| 18... | 1605 | 1.0 | 319 | 8.0 | 31.0 | 6.9 | 93 |
| 18... | 1607 | 10 | 319 | 8.0 | 30.5 | 6.4 | 86 |
| 18... | 1609 | 20 | 319 | 7.8 | 30.0 | 5.6 | 75 |
| 18... | 1611 | 24 | 319 | 7.7 | 30.0 | 5.2 | 69 |

### 324257097130301 LAKE ARLINGTON SITE CC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 05... | 1345 | 1.0 | 286 | 7.9 | 14.0 | 9.4 | 92 |
| 05... | 1346 | 12 | 286 | 7.9 | 14.0 | 9.4 | 92 |
| MAY | | | | | | | |
| 05... | 1500 | 1.0 | 310 | 7.8 | 32.5 | 6.8 | 94 |
| 05... | 1501 | 5.0 | 310 | 7.8 | 30.5 | 6.8 | 92 |
| 05... | 1502 | 11 | 310 | 7.9 | 24.5 | 6.7 | 82 |
| AUG | | | | | | | |
| 18... | 1450 | 1.0 | 319 | 7.9 | 36.0 | 6.5 | 94 |
| 18... | 1452 | 10 | 319 | 7.9 | 36.0 | 6.5 | 94 |
| 18... | 1454 | 15 | 319 | 7.9 | 36.5 | 6.5 | 96 |

### 324228097130301 LAKE ARLINGTON SITE DC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 05... | 1400 | 1.0 | 284 | 7.9 | 13.5 | 9.5 | 92 |
| 05... | 1401 | 10 | 284 | 8.0 | 11.5 | 9.8 | 91 |
| 05... | 1402 | 15 | 284 | 8.0 | 10.0 | 9.6 | 86 |
| MAY | | | | | | | |
| 05... | 1515 | 1.0 | 304 | 8.2 | 27.0 | 8.1 | 103 |
| 05... | 1516 | 10 | 304 | 8.2 | 22.5 | 7.7 | 90 |
| 05... | 1517 | 19 | 310 | 7.6 | 21.5 | 5.0 | 57 |
| AUG | | | | | | | |
| 18... | 1505 | 1.0 | 319 | 7.9 | 33.0 | 6.4 | 89 |
| 18... | 1507 | 5.0 | 319 | 7.8 | 32.0 | 6.1 | 84 |
| 18... | 1509 | 11 | 319 | 7.8 | 30.0 | 5.3 | 71 |

## LAKE ARLINGTON AT ARLINGTON, TX--Continued

### 324143097132201 LAKE ARLINGTON SITE EC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 1415 | 1.0 | 284 | 8.2 | 10.0 | .40 | 10.5 | 94 | 100 |
| 05... | 1418 | 10 | 284 | 8.2 | 10.0 | -- | 10.5 | 94 | -- |
| 05... | 1419 | 23 | 284 | 8.1 | 10.0 | -- | 10.4 | 93 | 110 |
| MAY | | | | | | | | | |
| 05... | 1525 | 1.0 | 301 | 8.4 | 25.5 | .70 | 8.8 | 109 | 100 |
| 05... | 1526 | 10 | 301 | 8.2 | 22.0 | -- | 7.3 | 85 | -- |
| 05... | 1527 | 20 | 312 | 7.6 | 20.5 | -- | 3.7 | 42 | -- |
| 05... | 1528 | 24 | 316 | 7.5 | 20.5 | -- | 1.7 | 19 | 100 |
| AUG | | | | | | | | | |
| 18... | 1525 | 1.0 | 312 | 8.2 | 29.5 | .40 | 7.5 | 99 | 110 |
| 18... | 1527 | 10 | 310 | 8.1 | 28.5 | -- | 6.9 | 90 | -- |
| 18... | 1529 | 16 | 310 | 8.1 | 28.5 | -- | 6.7 | 87 | 100 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 6 | 35 | 4.2 | 16 | .7 | 4.3 | 120 | 0 | 27 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 7 | 35 | 4.3 | 16 | .7 | 4.2 | 120 | 0 | 27 |
| MAY | | | | | | | | | |
| 05... | 11 | 34 | 4.7 | 16 | .7 | 4.0 | 110 | 2 | 27 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 5 | 34 | 4.6 | 17 | .7 | 3.9 | 120 | 0 | 27 |
| AUG | | | | | | | | | |
| 18... | 8 | 35 | 4.7 | 19 | .8 | 4.8 | 120 | 0 | 29 |
| 18... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 18... | 6 | 34 | 4.7 | 19 | .8 | 4.7 | 120 | 0 | 29 |

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 16 | 1.9 | 164 | .08 | .51 | .59 | .040 | 20 | <1 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 16 | 2.0 | 164 | .07 | .59 | .66 | .050 | 20 | <1 |
| MAY | | | | | | | | | |
| 05... | 15 | 1.4 | 158 | .01 | .71 | .72 | .030 | 10 | <3 |
| 05... | -- | -- | -- | .03 | .81 | .84 | .020 | 50 | 20 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 16 | 3.0 | 165 | .06 | .69 | .75 | .020 | 40 | 40 |
| AUG | | | | | | | | | |
| 18... | 20 | 4.0 | 176 | .00 | .65 | .65 | .080 | <10 | 1 |
| 18... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 18... | 20 | 4.0 | 175 | .00 | .71 | .71 | .050 | <10 | 2 |

## LAKE ARLINGTON AT ARLINGTON, TX--Continued

### 324133097130601 LAKE ARLINGTON SITE EL

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 05... | 1435 | 1.0 | 284 | 8.2 | 10.0 | 10.5 | 94 |
| 05... | 1436 | 10 | 284 | 8.2 | 10.0 | 10.4 | 93 |
| 05... | 1437 | 15 | 284 | 8.2 | 10.0 | 10.2 | 91 |
| MAY | | | | | | | |
| 05... | 1540 | 1.0 | 301 | 8.4 | 26.0 | 8.8 | 110 |
| 05... | 1541 | 10 | 301 | 8.2 | 22.0 | 7.6 | 88 |
| 05... | 1542 | 18 | 311 | 7.8 | 21.5 | 5.5 | 63 |
| AUG | | | | | | | |
| 18... | 1545 | 1.0 | 312 | 8.2 | 29.0 | 7.7 | 101 |
| 18... | 1547 | 8.0 | 312 | 8.2 | 29.0 | 7.5 | 99 |

### 324041097134601 LAKE ARLINGTON SITE FC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 1500 | 1.0 | 296 | 8.1 | 10.5 | .30 | 10.1 | 92 | 110 |
| 05... | 1505 | 12 | 296 | 8.1 | 10.5 | -- | 10.1 | 92 | 110 |
| MAY | | | | | | | | | |
| 05... | 1600 | 1.0 | 300 | 8.6 | 24.0 | .79 | 9.2 | 111 | 100 |
| 05... | 1602 | 10 | 307 | 7.9 | 21.5 | -- | 5.5 | 63 | -- |
| 05... | 1604 | 15 | 321 | 7.5 | 21.0 | -- | 3.0 | 34 | 100 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 10 | 36 | 4.5 | 17 | .7 | 4.2 | 120 | 0 | 29 |
| 05... | 7 | 35 | 4.4 | 16 | .7 | 4.1 | 120 | 0 | 29 |
| MAY | | | | | | | | | |
| 05... | 9 | 34 | 4.6 | 16 | .7 | 4.0 | 110 | 3 | 27 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 6 | 34 | 4.7 | 19 | .8 | 3.8 | 120 | 0 | 28 |

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| FEB | | | | | | | | | |
| 05... | 17 | 2.5 | 169 | .08 | .61 | .69 | .040 | 40 | 5 |
| 05... | 17 | 2.5 | 167 | .12 | .57 | .69 | .050 | 30 | 7 |
| MAY | | | | | | | | | |
| 05... | 15 | 1.4 | 159 | .01 | .76 | .77 | .030 | 10 | <3 |
| 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 16 | 3.1 | 168 | .06 | 1.0 | 1.1 | .030 | 30 | 20 |

## LAKE ARLINGTON AT ARLINGTON, TX--Continued

### 324304097113601 LAKE ARLINGTON SITE AC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | ARSENIC DISSOLVED (UG/L AS AS) | BARIUM, DISSOLVED (UG/L AS BA) | CADMIUM DISSOLVED (UG/L AS CD) | CHROMIUM, DISSOLVED (UG/L AS CR) | COPPER, DISSOLVED (UG/L AS CU) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 05... | 1250 | 1.0 | 1 | 40 | <1 | 0 | 0 |
| 05... | 1252 | 10 | -- | -- | -- | -- | -- |
| 05... | 1253 | 20 | -- | -- | -- | -- | -- |
| 05... | 1254 | 30 | -- | -- | -- | -- | -- |
| 05... | 1255 | 43 | 1 | 40 | <1 | 0 | 0 |
| MAY | | | | | | | |
| 05... | 1400 | 1.0 | 1 | 50 | <1 | 0 | 3 |
| 05... | 1402 | 10 | -- | -- | -- | -- | -- |
| 05... | 1404 | 20 | -- | -- | -- | -- | -- |
| 05... | 1408 | 30 | -- | -- | -- | -- | -- |
| 05... | 1410 | 35 | -- | -- | -- | -- | -- |
| 05... | 1412 | 42 | 1 | 50 | 1 | 0 | 2 |
| AUG | | | | | | | |
| 18... | 1315 | 1.0 | 2 | 30 | <1 | 0 | 2 |
| 18... | 1317 | 10 | -- | -- | -- | -- | -- |
| 18... | 1319 | 20 | -- | -- | -- | -- | -- |
| 18... | 1321 | 29 | 2 | 30 | <1 | 0 | 1 |

| DATE | IRON, DISSOLVED (UG/L AS FE) | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY DISSOLVED (UG/L AS HG) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|
| FEB | | | | | | | |
| 05... | <10 | 0 | <1 | .0 | 0 | 0 | <3 |
| 05... | -- | -- | -- | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- |
| 05... | 20 | -- | 0 | -- | -- | -- | -- |
| 05... | 20 | 0 | 40 | .0 | 0 | 0 | <3 |
| MAY | | | | | | | |
| 05... | <10 | 0 | 2 | .0 | 0 | 0 | <3 |
| 05... | -- | -- | -- | -- | -- | -- | -- |
| 05... | 40 | -- | 10 | -- | -- | -- | -- |
| 05... | 40 | -- | 40 | -- | -- | -- | -- |
| 05... | -- | -- | -- | -- | -- | -- | -- |
| 05... | 50 | 0 | 420 | .2 | 0 | 0 | <3 |
| AUG | | | | | | | |
| 18... | <10 | 0 | 2 | .0 | 0 | 0 | 5 |
| 18... | 10 | -- | 0 | -- | -- | -- | -- |
| 18... | 10 | -- | 0 | -- | -- | -- | -- |
| 18... | <10 | 0 | 20 | .0 | 0 | 0 | 10 |

LAKE ARLINGTON AT ARLINGTON, TX--Continued

324304097113601 LAKE ARLINGTON SITE AC

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| | FEB 5,80 | MAY 5,80 | AUG 18,80 |
|---|---|---|---|
| DATE | FEB 5,80 | MAY 5,80 | AUG 18,80 |
| TIME | 1251 | 1401 | 1316 |
| TOTAL CELLS/ML | 9800 | 2900 | 110000 |
| DIVERSITY: DIVISION | 1.5 | 1.4 | 0.2 |
| .CLASS | 1.5 | 1.4 | 0.2 |
| ..ORDER | 1.8 | 1.8 | 0.8 |
| ...FAMILY | 2.1 | 2.6 | 0.9 |
| ....GENUS | 2.9 | 3.9 | 1.8 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | -- | - | -- | - | * | 0 |
| ...COELASTRACEAE | | | | | | |
| ....COELASTRUM | -- | - | -- | - | * | 0 |
| ...HYDRODICTYACEAE | | | | | | |
| ....PEDIASTRUM | -- | - | 320 | 11 | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 270 | 3 | 320 | 11 | * | 0 |
| ....CHLORELLA | 2700# | 28 | 51 | 2 | -- | - |
| ....CHODATELLA | 370 | 4 | 77 | 3 | -- | - |
| ....CLOSTERIOPSIS | -- | - | * | 0 | -- | - |
| ....DICTYOSPHAERIUM | -- | - | 130 | 4 | -- | - |
| ....GLOEOACTINIUM | -- | - | 140 | 5 | -- | - |
| ....KIRCHNERIELLA | 800 | 8 | -- | - | -- | - |
| ....OOCYSTIS | -- | - | 26 | 1 | -- | - |
| ....SELENASTRUM | -- | - | 51 | 2 | -- | - |
| ....TETRAEDRON | 110 | 1 | -- | - | -- | - |
| ....TREUBARIA | -- | - | 26 | 1 | -- | - |
| ...SCENEDESMACEAE | | | | | | |
| ....CRUCIGENIA | -- | - | -- | - | * | 0 |
| ....SCENEDESMUS | 530 | 5 | 360 | 12 | 800 | 1 |
| ....TETRASTRUM | 320 | 3 | 51 | 2 | -- | - |
| ..TETRASPORALES | | | | | | |
| ...PALMELLACEAE | | | | | | |
| ....SPHAEROCYSTIS | -- | - | 64 | 2 | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | 26 | 1 | * | 0 |
| ..ZYGNEMATALES | | | | | | |
| ...DESMIDIACEAE | | | | | | |
| ....COSMARIUM | -- | - | -- | - | * | 0 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 1800# | 18 | 230 | 8 | * | 0 |
| ....MELOSIRA | 110 | 1 | 26 | 1 | -- | - |
| ..PENNALES | | | | | | |
| ...ACHNANTHACEAE | | | | | | |
| ....ACHNANTHES | -- | - | 26 | 1 | -- | - |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 53 | 1 | 150 | 5 | * | 0 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | -- | - | 410 | 14 | 3200 | 3 |
| ....ANACYSTIS | 1100 | 11 | 170 | 6 | 14000 | 13 |
| ....COCCOCHLORIS | -- | - | 150 | 5 | -- | - |
| ....GOMPHOSPHAERIA | -- | - | 51 | 2 | -- | - |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENA | 1700# | 17 | -- | - | -- | - |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | -- | - | 40000# | 36 |
| ....OSCILLATORIA | -- | - | -- | - | 50000# | 45 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....TRACHELOMONAS | -- | - | -- | - | * | 0 |
| PYRRHOPHYTA (FIRE ALGAE) | | | | | | |
| .DINOPHYCEAE | | | | | | |
| ..PERIDINIALES | | | | | | |
| ...GLENODINIACEAE | | | | | | |
| ....GLENODINIUM | -- | - | 26 | 1 | * | 0 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## LAKE ARLINGTON AT ARLINGTON, TX--Continued

### 324143097132201 LAKE ARLINGTON SITE EC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| | |
|---|---|
| DATE | AUG 18,80 |
| TIME | 1526 |
| TOTAL CELLS/ML | 72000 |
| DIVERSITY: DIVISION | 0.6 |
| .CLASS | 0.6 |
| ..ORDER | 1.4 |
| ...FAMILY | 1.5 |
| ....GENUS | 2.3 |

| ORGANISM | CELLS /ML | PER- CENT |
|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | |
| .CHLOROPHYCEAE | | |
| ..CHLOROCOCCALES | | |
| ...COELASTRACEAE | | |
| ....COELASTRUM | 980 | 1 |
| ...OOCYSTACEAE | | |
| ....ANKISTRODESMUS | 570 | 1 |
| ....KIRCHNERIELLA | 570 | 1 |
| ....SELENASTRUM | * | 0 |
| ....TREUBARIA | * | 0 |
| ...SCENEDESMACEAE | | |
| ....CRUCIGENIA | * | 0 |
| ....SCENEDESMUS | 650 | 1 |
| ..VOLVOCALES | | |
| ...CHLAMYDOMONADACEAE | | |
| ....CHLAMYDOMONAS | * | 0 |
| CHRYSOPHYTA | | |
| .BACILLARIOPHYCEAE | | |
| ..CENTRALES | | |
| ...COSCINODISCACEAE | | |
| ....CYCLOTELLA | 810 | 1 |
| ....MELOSIRA | * | 0 |
| ..PENNALES | | |
| ...FRAGILARIACEAE | | |
| ....FRAGILARIA | * | 0 |
| ...NAVICULACEAE | | |
| ....NAVICULA | * | 0 |
| ...NITZSCHIACEAE | | |
| ....NITZSCHIA | 3000 | 4 |
| ...SURIRELLACEAE | | |
| ....SURIRELLA | * | 0 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | |
| .CYANOPHYCEAE | | |
| ..CHROOCOCCALES | | |
| ...CHROOCOCCACEAE | | |
| ....AGMENELLUM | 6500 | 9 |
| ....ANACYSTIS | 8200 | 11 |
| ..HORMOGONALES | | |
| ...OSCILLATORIACEAE | | |
| ....LYNGBYA | 15000# | 20 |
| ....OSCILLATORIA | 34000# | 48 |
| EUGLENOPHYTA (EUGLENOIDS) | | |
| .EUGLENOPHYCEAE | | |
| ..EUGLENALES | | |
| ...EUGLENACEAE | | |
| ....EUGLENA | * | 0 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## LAKE ARLINGTON AT ARLINGTON, TX--Continued

### 324041097134601 LAKE ARLINGTON SITE FC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO MAY 1980

| DATE<br>TIME | FEB 5,80<br>1501 | MAY 5,80<br>1601 |
|---|---|---|
| TOTAL CELLS/ML | 1000 | 4600 |
| DIVERSITY: DIVISION | 0.8 | 1.7 |
| .CLASS | 0.8 | 1.7 |
| ..ORDER | 0.9 | 1.9 |
| ...FAMILY | 2.3 | 2.5 |
| ....GENUS | 3.1 | 3.7 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | |
| .CHLOROPHYCEAE | | | | |
| ..CHLOROCOCCALES | | | | |
| ...COELASTRACEAE | | | | |
| ....COELASTRUM | 240# | 24 | 77 | 2 |
| ...HYDRODICTYACEAE | | | | |
| ....PEDIASTRUM | 65 | 6 | 64 | 1 |
| ...MICRACTINIACEAE | | | | |
| ....GOLENKINIA | -- | - | * | 0 |
| ...OOCYSTACEAE | | | | |
| ....ANKISTRODESMUS | 180# | 18 | 490 | 11 |
| ....CHLORELLA | 10 | 1 | 150 | 3 |
| ....CHODATELLA | -- | - | 64 | 1 |
| ....DICTYOSPHAERIUM | -- | - | 270 | 6 |
| ....KIRCHNERIELLA | 120 | 11 | -- | - |
| ....SELENASTRUM | -- | - | 51 | 1 |
| ....TETRAEDRON | 25 | 2 | * | 0 |
| ...SCENEDESMACEAE | | | | |
| ....CRUCIGENIA | -- | - | 130 | 3 |
| ....SCENEDESMUS | 140 | 14 | 410 | 9 |
| ....TETRASTRUM | 20 | 2 | 310 | 7 |
| ..TETRASPORALES | | | | |
| ...PALMELLACEAE | | | | |
| ....SPHAEROCYSTIS | -- | - | 100 | 2 |
| CHRYSOPHYTA | | | | |
| .BACILLARIOPHYCEAE | | | | |
| ..CENTRALES | | | | |
| ...COSCINODISCACEAE | | | | |
| ....CYCLOTELLA | 25 | 2 | 570 | 12 |
| ....MELOSIRA | 40 | 4 | -- | - |
| ....SKELETONEMA | 120 | 12 | -- | - |
| ..PENNALES | | | | |
| ...NITZSCHIACEAE | | | | |
| ....NITZSCHIA | 20 | 2 | 77 | 2 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | |
| .CRYPTOPHYCEAE | | | | |
| ..CRYPTOMONADALES | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | |
| ....CHROOMONAS | -- | - | 90 | 2 |
| ...CRYPTOMONADACEAE | | | | |
| ....CRYPTOMONAS | -- | - | * | 0 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | |
| .CYANOPHYCEAE | | | | |
| ..CHROOCOCCALES | | | | |
| ...CHROOCOCCACEAE | | | | |
| ....AGMENELLUM | -- | - | 620 | 14 |
| ....ANACYSTIS | -- | - | 900# | 20 |
| ....COCCOCHLORIS | -- | - | 64 | 1 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | |
| .EUGLENOPHYCEAE | | | | |
| ..EUGLENALES | | | | |
| ...EUGLENACEAE | | | | |
| ....EUGLENA | * | 0 | 39 | 1 |
| ....PHACUS | 10 | 1 | -- | - |
| ....TRACHELOMONAS | -- | - | 26 | 1 |
| PYRRHOPHYTA (FIRE ALGAE) | | | | |
| .DINOPHYCEAE | | | | |
| ..PERIDINIALES | | | | |
| ...GLENODINIACEAE | | | | |
| ....GLENODINIUM | -- | - | * | 0 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX

LOCATION.--Lat 32°45'46", long 96°59'42", Dallas County, Hydrologic Unit 12030102, on left bank at upstream side of bridge on Belt Line Road, 1.3 mi (2.1 km) northeast of Grand Prairie, 3.7 mi (6.0 km) upstream from Bear Creek, 6.5 mi (10.5 km) upstream from Mountain Creek, and at mile 514.6 (828.0 km).

DRAINAGE AREA.--3,065 mi$^2$ (7,938 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1925 to current year.

REVISED RECORDS.--WSP 628: 1925. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 410.42 ft (125.096 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 6, 1933, nonrecording gage at bridge on old channel 2,500 ft (762 m) southeast of present site at datum 2.56 ft (0.780 m) higher. Dec. 6, 1933, to May 24, 1956, water-stage recorder at site 440 ft (134 m) downstream from site of nonrecording gage at datum 2.56 ft (0.780 m) higher than present datum. May 25, 1956, to Apr. 18, 1957, nonrecording gage at site 1.5 mi (2.4 km) downstream at different datum. Apr. 19 to Aug. 13, 1957, nonrecording gage on bridge at present site and datum.

REMARKS.--Water-discharge records good. Flow is affected at times by three upstream reservoirs with a combined capacity of 248,600 acre-ft (307 hm$^3$), of which 76,550 acre-ft (94.4 hm$^3$) is for flood control. During the current year, 79,460 acre-ft (98.0 hm$^3$) of sewage effluent was discharged into river upstream from this station by the city of Fort Worth. There are many diversions upstream from this station for municipal, industrial, and other uses. The river channel at this station was relocated and rectified in 1956. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--55 years (water years 1926-80), 538 ft$^3$/s (15.24 m$^3$/s), 389,800 acre-ft/yr (481 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,000 ft$^3$/s (1,760 m$^3$/s) May 17, 1949, gage height, 28.00 ft (8.534 m), site and datum then in use, from rating curve extended above 36,000 ft$^3$/s (1,020 m$^3$/s); minimum observed, 3.2 ft$^3$/s (0.091 m$^3$/s) June 6, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 30.6 ft (9.33 m) in May 1908, former site and datum, from information by local resident. Flood in April 1922 reached a stage of 29.0 ft (8.84 m) former site and datum, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,560 ft$^3$/s (157 m$^3$/s) Sept. 30 at 0400 hours, gage height, 14.67 ft (4.471 m); minimum daily, 105 ft$^3$/s (2.97 m$^3$/s) July 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 154 | 250 | 118 | 171 | 204 | 178 | 220 | 294 | 291 | 142 | 130 | 181 |
| 2 | 160 | 176 | 123 | 168 | 299 | 171 | 207 | 2480 | 294 | 143 | 121 | 192 |
| 3 | 149 | 155 | 117 | 163 | 308 | 168 | 1420 | 750 | 292 | 140 | 124 | 204 |
| 4 | 149 | 153 | 123 | 156 | 296 | 177 | 799 | 292 | 286 | 124 | 117 | 203 |
| 5 | 147 | 145 | 126 | 150 | 295 | 172 | 442 | 230 | 271 | 114 | 127 | 203 |
| 6 | 144 | 158 | 121 | 148 | 291 | 166 | 368 | 213 | 283 | 109 | 113 | 194 |
| 7 | 140 | 157 | 123 | 146 | 292 | 170 | 362 | 378 | 278 | 105 | 132 | 194 |
| 8 | 140 | 157 | 121 | 148 | 402 | 160 | 357 | 595 | 287 | 129 | 140 | 213 |
| 9 | 152 | 183 | 115 | 142 | 744 | 163 | 338 | 802 | 283 | 128 | 132 | 580 |
| 10 | 144 | 171 | 131 | 144 | 486 | 158 | 335 | 298 | 288 | 134 | 152 | 318 |
| 11 | 136 | 152 | 142 | 144 | 443 | 169 | 337 | 245 | 289 | 133 | 150 | 227 |
| 12 | 136 | 140 | 644 | 140 | 372 | 162 | 353 | 237 | 287 | 118 | 144 | 188 |
| 13 | 131 | 141 | 966 | 139 | 414 | 166 | 1140 | 255 | 283 | 122 | 147 | 157 |
| 14 | 132 | 135 | 261 | 131 | 392 | 157 | 1060 | 256 | 272 | 116 | 154 | 142 |
| 15 | 249 | 137 | 192 | 142 | 381 | 154 | 440 | 2150 | 269 | 125 | 158 | 134 |
| 16 | 1720 | 133 | 168 | 140 | 375 | 250 | 380 | 3400 | 250 | 118 | 168 | 144 |
| 17 | 309 | 121 | 148 | 140 | 392 | 308 | 355 | 1200 | 175 | 118 | 171 | 129 |
| 18 | 205 | 130 | 148 | 140 | 347 | 300 | 335 | 852 | 150 | 122 | 154 | 128 |
| 19 | 175 | 126 | 151 | 141 | 258 | 299 | 336 | 640 | 143 | 119 | 163 | 129 |
| 20 | 158 | 128 | 154 | 184 | 225 | 304 | 328 | 471 | 287 | 112 | 165 | 124 |
| 21 | 152 | 170 | 160 | 594 | 215 | 303 | 323 | 362 | 255 | 120 | 177 | 125 |
| 22 | 186 | 159 | 247 | 2300 | 208 | 299 | 332 | 392 | 210 | 142 | 174 | 128 |
| 23 | 212 | 129 | 1520 | 1470 | 195 | 317 | 320 | 527 | 161 | 132 | 177 | 133 |
| 24 | 171 | 121 | 1380 | 397 | 293 | 240 | 363 | 457 | 149 | 120 | 177 | 133 |
| 25 | 157 | 116 | 314 | 282 | 310 | 195 | 916 | 327 | 145 | 126 | 173 | 136 |
| 26 | 150 | 113 | 195 | 234 | 226 | 175 | 430 | 307 | 145 | 123 | 191 | 239 |
| 27 | 138 | 113 | 192 | 199 | 185 | 226 | 338 | 298 | 132 | 119 | 196 | 602 |
| 28 | 141 | 120 | 192 | 185 | 181 | 1090 | 330 | 315 | 136 | 115 | 199 | 866 |
| 29 | 136 | 114 | 413 | 232 | 188 | 566 | 329 | 311 | 128 | 137 | 198 | 2990 |
| 30 | 574 | 118 | 253 | 243 | --- | 391 | 320 | 294 | 130 | 149 | 198 | 4280 |
| 31 | 864 | --- | 192 | 211 | --- | 242 | --- | 294 | --- | 139 | 189 | --- |
| TOTAL | 7711 | 4321 | 9250 | 9324 | 9217 | 7996 | 13913 | 19922 | 6849 | 3893 | 4911 | 13616 |
| MEAN | 249 | 144 | 298 | 301 | 318 | 258 | 464 | 643 | 228 | 126 | 158 | 454 |
| MAX | 1720 | 250 | 1520 | 2300 | 744 | 1090 | 1420 | 3400 | 294 | 149 | 199 | 4280 |
| MIN | 131 | 113 | 115 | 131 | 181 | 154 | 207 | 213 | 128 | 105 | 113 | 124 |
| AC-FT | 15290 | 8570 | 18350 | 18490 | 18280 | 15860 | 27600 | 39520 | 13580 | 7720 | 9740 | 27010 |

CAL YR 1979 TOTAL 238464 MEAN 653 MAX 10100 MIN 113 AC-FT 473000
WTR YR 1980 TOTAL 110923 MEAN 303 MAX 4280 MIN 105 AC-FT 220000

## 08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1956 to current year. Chemical and biochemical analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
pH: October 1976 to current year.
WATER TEMPERATURES: October 1966 to current year.
DISSOLVED OXYGEN: October 1976 to current year.

INSTRUMENTATION.--Water-quality monitor since Oct. 29, 1976.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1320 micromhos Dec. 12, 1978; minimum, 188 micromhos May 28, 1978.
pH (1976-1979): Maximum, 8.5 units Aug. 12, 1978; minimum, 6.6 units Jan. 6, 1979.
WATER TEMPERATURES: Maximum, 34.0°C Aug. 9, 1970, Aug. 2, 1974, July 12, 16, 1978; minimum, 3.0°C Jan. 9, 1973.
DISSOLVED OXYGEN: Maximum, 12.3 mg/L July 8, 1980; minimum, 0.0 mg/L on several days each year.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,220 micromhos Sept. 8; minimum, 226 micromhos Sept. 29.
WATER TEMPERATURES: Maximum, 32.5°C on several days during June and July.
DISSOLVED OXYGEN: Maximum, 12.3 mg/L July 8; minimum, 0.0 mg/L on many days during the year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | 1330 | 222 | 860 | 7.3 | 21.5 | 25 | 5.7 | 2.2 | 25 | 8.4 | 150 | 0 |
| NOV 08... | 1455 | 177 | 845 | 7.4 | 17.0 | 20 | 9.6 | 5.1 | 54 | 8.7 | 170 | 0 |
| DEC 12... | 1530 | 766 | 458 | 7.4 | 9.5 | 100 | 390 | 7.4 | 65 | 15 | 100 | 0 |
| JAN 16... | 1340 | 137 | 965 | 7.4 | 16.5 | 15 | 5.3 | 1.7 | 17 | 19 | 180 | 0 |
| FEB 14... | 1115 | 408 | 725 | 7.6 | 11.5 | 15 | 32 | 9.2 | 84 | 17 | 200 | 11 |
| MAR 04... | 1115 | 192 | 950 | 7.6 | 14.5 | 20 | 17 | 7.8 | 77 | 26 | 190 | 0 |
| APR 16... | 1400 | 372 | 680 | 7.5 | 18.5 | 5 | 33 | 5.4 | 57 | 16 | 180 | 11 |
| MAY 21... | 1435 | 362 | 690 | 7.6 | 24.5 | 10 | 36 | 3.2 | 38 | 18 | 180 | 16 |
| JUN 11... | 1030 | 294 | 666 | 7.4 | 26.0 | 25 | 5.4 | .5 | 6 | 5.9 | 140 | 0 |
| JUL 23... | 1130 | 159 | 1060 | 7.7 | 29.5 | 25 | 3.4 | 1.3 | 17 | 4.9 | 150 | 0 |
| AUG 27... | 1320 | 195 | 1020 | 7.4 | 30.5 | 10 | 2.8 | 4.1 | 55 | 7.0 | 130 | 0 |
| SEP 09... | 1345 | 883 | 931 | 7.1 | 28.5 | 140 | 280 | .0 | 0 | 60 | 140 | 0 |

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | 48 | 6.8 | 120 | 4.3 | 11 | 230 | 0 | 140 | 70 | .9 | 8.5 |
| NOV 08... | 56 | 7.4 | 100 | 3.3 | 13 | 220 | 0 | 98 | 88 | .9 | 9.2 |
| DEC 12... | 35 | 4.2 | 51 | 2.2 | 6.9 | 140 | 0 | 54 | 43 | .5 | 6.0 |
| JAN 16... | 59 | 9.0 | 110 | 3.5 | 13 | 280 | 0 | 130 | 77 | .8 | 8.8 |
| FEB 14... | 69 | 6.6 | 71 | 2.2 | 8.2 | 230 | 0 | 110 | 50 | .6 | 5.9 |
| MAR 04... | 63 | 8.3 | 120 | 3.8 | 11 | 260 | 0 | 150 | 81 | .7 | 6.7 |
| APR 16... | 60 | 6.1 | 66 | 2.2 | 7.5 | 200 | 0 | 77 | 54 | .5 | 6.5 |
| MAY 21... | 61 | 6.8 | 71 | 2.3 | 7.8 | 200 | 0 | 100 | 51 | .6 | 7.3 |
| JUN 11... | 45 | 6.4 | 82 | 3.0 | 7.1 | 200 | 0 | 77 | 50 | .5 | 6.6 |
| JUL 23... | 47 | 7.5 | 140 | 5.0 | 12 | 280 | 0 | 140 | 80 | .7 | 11 |
| AUG 27... | 40 | 8.2 | 140 | 5.3 | 11 | 260 | 0 | 140 | 88 | 1.1 | 10 |
| SEP 09... | 42 | 7.7 | 120 | 4.5 | 10 | 230 | 0 | 110 | 91 | .9 | 8.5 |

## 08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) | SOLIDS, VOLA-TILE, SUS-PENDED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | 519 | 24 | 18 | 2.5 | .560 | 3.1 | 4.100 | .90 | 5.0 | 3.500 | 17 |
| NOV 08... | 481 | 23 | 9 | 2.7 | .490 | 3.2 | 2.000 | 1.7 | 3.7 | .090 | 18 |
| DEC 12... | 270 | 684 | 37 | .23 | .100 | .33 | 2.900 | .00 | .58 | .400 | 23 |
| JAN 16... | 546 | 26 | 8 | .00 | .230 | .14 | 1.200 | 15 | 16 | 6.500 | 18 |
| FEB 14... | 435 | 88 | 20 | .71 | .140 | .85 | 4.500 | -- | -- | 2.000 | 15 |
| MAR 04... | 569 | 34 | 24 | .20 | .190 | .39 | 10.000 | 13 | 23 | 3.100 | 30 |
| APR 16... | 376 | 65 | 15 | 1.2 | .470 | 1.7 | 1.600 | 1.9 | 3.5 | 1.500 | 16 |
| MAY 21... | 404 | 46 | 38 | .94 | .460 | 1.4 | 1.800 | 1.7 | 3.5 | 1.900 | 18 |
| JUN 11... | 373 | 12 | 6 | .10 | .060 | .16 | 3.800 | 6.2 | 10 | 1.900 | 18 |
| JUL 23... | 576 | 1 | 3 | .56 | .290 | .85 | -- | -- | 5.5 | 2.100 | 22 |
| AUG 27... | 566 | 3 | 3 | 1.7 | .430 | 2.1 | 14.000 | 2.0 | 16 | 5.200 | 11 |
| SEP 09... | 504 | 1300 | 300 | -- | .010 | .00 | 14.000 | 47 | 61 | 21.000 | 300 |

| DATE | TIME | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| JAN 16... | 1340 | 7 | 20 | <1 | 10 | 2 | 40 |
| MAR 04... | 1115 | 2 | 30 | 2 | 10 | 14 | 30 |
| JUL 23... | 1130 | 3 | 10 | <1 | 0 | 0 | 40 |
| SEP 09... | 1345 | 6 | 8 | <1 | 0 | 2 | 60 |

| DATE | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY DIS-SOLVED (UG/L AS HG) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| JAN 16... | 1 | 90 | .0 | 0 | 0 | 70 |
| MAR 04... | 0 | 90 | .0 | 0 | 0 | 80 |
| JUL 23... | 0 | 150 | .1 | 0 | 0 | 40 |
| SEP 09... | 1 | 210 | .2 | 0 | 0 | 10 |

### 08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

#### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 7711 | 689 | 385 | 8020 | 58 | 1200 | 75 | 1570 | 170 |
| NOV. | 1979 | 4321 | 821 | 460 | 5370 | 72 | 843 | 93 | 1080 | 180 |
| DEC. | 1979 | 9250 | 654 | 365 | 9130 | 54 | 1340 | 71 | 1770 | 170 |
| JAN. | 1980 | 9324 | 658 | 368 | 9250 | 55 | 1380 | 72 | 1800 | 160 |
| FEB. | 1980 | 9217 | 728 | 407 | 10100 | 61 | 1520 | 80 | 1980 | 180 |
| MAR. | 1980 | 7996 | 808 | 453 | 9770 | 71 | 1540 | 92 | 1980 | 180 |
| APR. | 1980 | 13913 | 612 | 341 | 12800 | 48 | 1810 | 64 | 2410 | 170 |
| MAY | 1980 | 19922 | 530 | 295 | 15900 | 40 | 2170 | 54 | 2920 | 150 |
| JUNE | 1980 | 6849 | 757 | 424 | 7830 | 64 | 1190 | 84 | 1550 | 180 |
| JULY | 1980 | 3893 | 1040 | 587 | 6170 | 100 | 1060 | 130 | 1330 | 180 |
| AUG. | 1980 | 4911 | 1050 | 593 | 7860 | 100 | 1360 | 130 | 1700 | 180 |
| SEPT | 1980 | 13616 | 556 | 311 | 11400 | 46 | 1700 | 61 | 2230 | 140 |
| TOTAL | | 110923 | ** | ** | 114000 | ** | 17100 | ** | 22300 | ** |
| WTD. AVG. | | 303 | 679 | 379 | ** | 57 | ** | 74 | ** | 170 |

#### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | |
| 1 | 872 | 854 | 860 | --- | --- | 450 | --- | --- | 850 | 722 | 692 | 710 |
| 2 | 870 | 822 | 837 | --- | --- | 550 | --- | --- | 880 | 772 | 730 | 761 |
| 3 | 858 | 808 | 830 | --- | --- | 600 | --- | --- | 900 | 784 | 740 | 772 |
| 4 | 876 | 828 | 865 | --- | --- | 700 | 918 | 898 | 905 | 860 | 780 | 831 |
| 5 | 900 | 864 | 880 | --- | --- | 830 | 984 | 908 | 936 | 896 | 850 | 877 |
| 6 | 884 | 852 | 862 | --- | --- | 840 | 1020 | 992 | 1010 | 896 | 874 | 889 |
| 7 | 888 | 862 | 875 | --- | --- | 830 | 1010 | 988 | 1000 | 944 | 876 | 922 |
| 8 | 918 | 888 | 904 | 836 | 818 | 828 | 1010 | 988 | 994 | 912 | 884 | 900 |
| 9 | 902 | 830 | 871 | 820 | 724 | 780 | 1030 | 984 | 1010 | 960 | 884 | 926 |
| 10 | 858 | 816 | 832 | 814 | 788 | 800 | 994 | 970 | 983 | 1020 | 940 | 979 |
| 11 | 872 | 854 | 860 | 882 | 816 | 852 | 978 | 906 | 934 | 986 | 952 | 967 |
| 12 | 942 | 868 | 889 | 898 | 860 | 879 | 906 | 404 | 682 | 996 | 936 | 963 |
| 13 | 986 | 950 | 969 | 854 | 822 | 836 | --- | --- | 600 | 1010 | 982 | 1000 |
| 14 | 998 | 984 | 989 | 950 | 844 | 879 | --- | --- | 450 | 986 | 952 | 974 |
| 15 | 1000 | 384 | 893 | 982 | 958 | 967 | --- | --- | 500 | 958 | 898 | 941 |
| 16 | 832 | 292 | 447 | 1000 | 970 | 987 | --- | --- | 600 | 1000 | 890 | 947 |
| 17 | 510 | 368 | 439 | 1010 | 970 | 992 | --- | --- | 750 | 1020 | 974 | 1000 |
| 18 | 664 | 520 | 615 | 1030 | 992 | 1010 | 884 | 870 | 879 | 998 | 978 | 989 |
| 19 | 776 | 672 | 729 | 1030 | 966 | 1000 | 936 | 870 | 903 | 1060 | 982 | 1020 |
| 20 | 816 | 750 | 788 | 982 | 874 | 936 | 976 | 938 | 958 | 1040 | 866 | 984 |
| 21 | 890 | 804 | 853 | 930 | 794 | 887 | 978 | 838 | 949 | 1020 | 558 | 785 |
| 22 | 880 | 758 | 845 | 958 | 916 | 929 | 970 | 666 | 872 | 604 | 280 | 427 |
| 23 | 848 | 712 | 811 | 960 | 908 | 931 | 990 | 268 | 618 | --- | --- | 440 |
| 24 | 794 | 684 | 727 | 922 | 854 | 891 | 402 | 298 | 349 | 592 | --- | 550 |
| 25 | 852 | 798 | 827 | 852 | 808 | 825 | 550 | 406 | 477 | --- | --- | 570 |
| 26 | 882 | 826 | 852 | 836 | 786 | 816 | 638 | 552 | 593 | --- | --- | 600 |
| 27 | 930 | 862 | 888 | 826 | --- | 810 | 702 | 648 | 675 | --- | --- | 650 |
| 28 | 958 | 926 | 938 | --- | --- | 810 | 780 | 696 | 743 | --- | --- | 700 |
| 29 | 956 | 912 | 926 | --- | --- | 820 | 848 | 616 | 747 | --- | --- | 750 |
| 30 | 906 | 242 | 669 | --- | --- | 830 | 626 | 562 | 584 | --- | --- | 800 |
| 31 | --- | --- | 500 | --- | --- | --- | 682 | 628 | 643 | 834 | 802 | 815 |
| MONTH | 1000 | 242 | 809 | 1030 | 724 | 837 | 1030 | 268 | 773 | 1060 | 280 | 821 |

## 08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 892 | 838 | 879 | 1020 | 926 | 980 | 776 | 666 | 724 | 716 | 670 | 696 |
| 2 | 906 | 734 | 806 | 998 | 932 | 964 | 860 | 778 | 827 | 732 | 264 | 478 |
| 3 | 774 | 672 | 726 | 1010 | 944 | 987 | 886 | 368 | 567 | 528 | 302 | 412 |
| 4 | 762 | 688 | 719 | 994 | 962 | 979 | 608 | 424 | 495 | 680 | 506 | 596 |
| 5 | 722 | 626 | 668 | 1030 | 974 | 1010 | 640 | 586 | 619 | 746 | 666 | 699 |
| 6 | 704 | 650 | 678 | 1020 | 1010 | 1010 | 624 | 592 | 605 | 842 | 752 | 790 |
| 7 | 708 | 642 | 679 | 1080 | 1000 | 1040 | 674 | 590 | 629 | 834 | 640 | 767 |
| 8 | 696 | 592 | 626 | 1080 | 1020 | 1050 | 696 | 652 | 671 | 658 | 390 | 570 |
| 9 | 654 | --- | 600 | 1090 | 1030 | 1070 | 720 | 688 | 700 | 526 | 382 | 470 |
| 10 | --- | --- | 630 | 1110 | 1030 | 1070 | 718 | 660 | 695 | 676 | 528 | 601 |
| 11 | --- | --- | 650 | 1020 | 950 | 985 | 718 | 654 | 697 | 766 | 684 | 727 |
| 12 | --- | --- | 700 | 1070 | 956 | 1030 | 722 | 652 | 689 | 790 | 726 | 761 |
| 13 | --- | --- | 690 | 1070 | 1020 | 1050 | 664 | 446 | 543 | 824 | 750 | 796 |
| 14 | 742 | --- | 700 | 1080 | 1020 | 1050 | 482 | 370 | 418 | 822 | 518 | 790 |
| 15 | 744 | 708 | 725 | 1070 | 1010 | 1040 | 608 | 488 | 547 | 760 | 334 | 522 |
| 16 | 742 | 662 | 694 | 1120 | 1020 | 1070 | 672 | 600 | 641 | 384 | 270 | 319 |
| 17 | 712 | 666 | 696 | 986 | 864 | 903 | 748 | 632 | 703 | 430 | 370 | 414 |
| 18 | 694 | 614 | 674 | 854 | 762 | 798 | 722 | 662 | 689 | 530 | 394 | 482 |
| 19 | 774 | 646 | 692 | 852 | 750 | 792 | 752 | 684 | 724 | 592 | 492 | 527 |
| 20 | 850 | 780 | 824 | 808 | 720 | 770 | 750 | 666 | 711 | 642 | 484 | 589 |
| 21 | 904 | 842 | 872 | 782 | 700 | 742 | 778 | 696 | 722 | 720 | 632 | 671 |
| 22 | 936 | 870 | 906 | 782 | 710 | 747 | 720 | 674 | 692 | 724 | 622 | 668 |
| 23 | 1000 | 928 | 958 | 802 | 688 | 745 | 732 | 698 | 721 | 712 | 596 | 669 |
| 24 | 986 | 804 | 920 | 772 | 658 | 714 | 766 | 484 | 698 | 674 | 616 | 647 |
| 25 | 798 | 710 | 745 | 820 | 726 | 776 | 712 | 418 | 563 | 728 | 610 | 673 |
| 26 | 812 | 688 | 736 | 934 | 804 | 888 | 694 | 460 | 560 | 724 | 660 | 702 |
| 27 | 920 | 818 | 887 | 936 | 650 | 849 | 668 | 598 | 645 | 748 | 660 | 705 |
| 28 | 942 | 874 | 914 | 908 | 386 | 586 | 670 | 624 | 654 | 722 | 678 | 695 |
| 29 | 1020 | 918 | 970 | 636 | 406 | 504 | 694 | 614 | 651 | 760 | 652 | 699 |
| 30 | --- | --- | --- | 616 | 550 | 589 | 708 | 674 | 692 | 784 | 716 | 751 |
| 31 | --- | --- | --- | 674 | 608 | 636 | --- | --- | --- | 786 | 698 | 738 |
| MONTH | 1020 | 592 | 757 | 1120 | 386 | 885 | 886 | 368 | 650 | 842 | 264 | 633 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 746 | 636 | 714 | 1000 | 962 | 981 | 1070 | 1050 | 1060 | 1120 | 1040 | 1080 |
| 2 | 744 | 674 | 709 | 1030 | 960 | 998 | 1080 | 1010 | 1040 | 1070 | 1030 | 1050 |
| 3 | 718 | 668 | 695 | 1030 | 1010 | 1020 | 1090 | 1040 | 1060 | 1040 | 988 | 1020 |
| 4 | 744 | 664 | 696 | 1020 | 990 | 1010 | 1080 | 1070 | 1070 | 1010 | 916 | 952 |
| 5 | 690 | 642 | 670 | 1040 | 1000 | 1020 | 1070 | 998 | 1020 | 1110 | 1010 | 1040 |
| 6 | 730 | 690 | 717 | 1030 | 1010 | 1020 | 1080 | 1010 | 1030 | 1180 | 1080 | 1120 |
| 7 | 734 | 694 | 718 | 1010 | 932 | 961 | 1080 | 1040 | 1060 | 1210 | 1130 | 1160 |
| 8 | 720 | 646 | 686 | 962 | 928 | 947 | 1150 | 1080 | 1110 | 1220 | 1010 | 1140 |
| 9 | 714 | 646 | 680 | 1020 | 944 | 982 | 1150 | 1050 | 1080 | 1040 | 652 | 926 |
| 10 | 698 | 612 | 664 | 1080 | 1020 | 1040 | 1110 | 1050 | 1070 | 722 | 262 | 588 |
| 11 | 714 | 634 | 674 | 1120 | 1070 | 1090 | 1100 | 970 | 1040 | --- | --- | 600 |
| 12 | 718 | 644 | 681 | 1110 | 1060 | 1070 | 982 | 952 | 966 | --- | --- | 650 |
| 13 | 746 | 684 | 719 | 1060 | 1020 | 1030 | 1040 | 974 | 998 | --- | --- | 700 |
| 14 | 734 | 676 | 712 | 1040 | 990 | 1010 | 1080 | 1030 | 1050 | --- | --- | 750 |
| 15 | 740 | 668 | 710 | 1040 | 990 | 1010 | 1060 | 1010 | 1040 | --- | --- | 800 |
| 16 | 726 | 628 | 683 | 1010 | 964 | 977 | 1080 | 1040 | 1060 | --- | --- | 850 |
| 17 | 752 | 670 | 696 | 1180 | 1030 | 1090 | 1080 | 982 | 1050 | --- | --- | 900 |
| 18 | 902 | 770 | 862 | 1180 | 1110 | 1130 | 966 | 922 | 934 | --- | --- | 950 |
| 19 | 970 | 894 | 941 | 1140 | 1100 | 1120 | 972 | 932 | 955 | --- | --- | 1000 |
| 20 | 922 | 592 | 823 | 1140 | 1070 | 1090 | --- | 964 | 1030 | --- | --- | 1030 |
| 21 | 910 | 730 | 818 | 1120 | 942 | 1080 | 1110 | 1050 | 1080 | --- | --- | 1080 |
| 22 | 840 | 572 | 757 | 1040 | 972 | 1030 | 1110 | 1050 | 1070 | 1110 | 1100 | 1110 |
| 23 | 888 | 730 | 841 | 1080 | 1020 | 1040 | 1080 | 1040 | 1060 | 1110 | 1010 | 1040 |
| 24 | 874 | 822 | 849 | 1070 | 1050 | 1060 | 1130 | 1050 | 1070 | 1020 | 982 | 996 |
| 25 | 982 | 824 | 905 | 1060 | 988 | 1020 | 1160 | 1120 | 1140 | 1050 | 980 | 1010 |
| 26 | 1020 | 968 | 987 | 1130 | 1060 | 1090 | 1120 | 1040 | 1060 | 1080 | 550 | 1030 |
| 27 | 1010 | 974 | 987 | 1130 | --- | 1110 | 1100 | 1020 | 1050 | 780 | 422 | 666 |
| 28 | 1010 | 956 | 982 | --- | --- | 1100 | 1140 | 930 | 1080 | 682 | 448 | 501 |
| 29 | 1070 | 1000 | 1020 | --- | --- | 1080 | 1140 | 1060 | 1100 | 464 | 226 | 321 |
| 30 | 1070 | 994 | 1030 | 1110 | 1020 | 1070 | 1120 | 1040 | 1080 | 394 | 252 | 288 |
| 31 | --- | --- | --- | 1080 | 1000 | 1040 | 1110 | 1040 | 1070 | --- | --- | --- |
| MONTH | 1070 | 572 | 788 | 1180 | 928 | 1040 | 1160 | 922 | 1050 | 1220 | 226 | 878 |

## 08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

### PH (STANDARD UNITS), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 7.5 | 7.3 | 7.4 | | | | | | | --- | --- | --- |
| 2 | 7.5 | 7.3 | 7.4 | | | | | | | 7.5 | 7.5 | 7.5 |
| 3 | 7.5 | 7.4 | 7.4 | | | | | | | 7.6 | 7.5 | 7.6 |
| 4 | 7.5 | 7.4 | 7.4 | | | | | | | 7.7 | 7.6 | 7.7 |
| 5 | 7.4 | 7.3 | 7.4 | | | | | | | 7.6 | 7.5 | 7.6 |
| 6 | 7.5 | 7.3 | 7.3 | | | | | | | 7.6 | 7.4 | 7.5 |
| 7 | 7.5 | 7.3 | 7.4 | | | | | | | 7.5 | 7.2 | 7.3 |
| 8 | 7.6 | 7.3 | 7.4 | | | | | | | 7.5 | 7.3 | 7.4 |
| 9 | 7.5 | 7.3 | 7.4 | | | | | | | 7.5 | 7.3 | 7.4 |
| 10 | 7.5 | 6.1 | 7.4 | | | | | | | 7.4 | 7.3 | 7.3 |
| 11 | 7.4 | 7.3 | 7.4 | | | | | | | 7.3 | 7.1 | 7.2 |
| 12 | 7.4 | 7.3 | 7.3 | | | | | | | 7.3 | 7.1 | 7.2 |
| 13 | 7.4 | 7.3 | 7.3 | | | | | | | 7.4 | 7.1 | 7.2 |
| 14 | 7.4 | 7.3 | 7.4 | | | | | | | 7.5 | 7.1 | 7.3 |
| 15 | 7.6 | 7.3 | 7.4 | | | | | | | 7.5 | 7.3 | 7.4 |
| 16 | 7.6 | 7.2 | 7.5 | | | | | | | 7.5 | 7.3 | 7.4 |
| 17 | 7.5 | 7.4 | 7.4 | | | | | | | 7.3 | 7.2 | 7.2 |
| 18 | 7.4 | 7.2 | 7.3 | | | | | | | 7.3 | 7.1 | 7.2 |
| 19 | 7.3 | 7.2 | 7.3 | | | | | | | 7.2 | 7.2 | 7.2 |
| 20 | 7.3 | 7.2 | 7.3 | | | | | | | 7.2 | 7.0 | 7.1 |
| 21 | 7.3 | 7.3 | 7.3 | | | | | | | 7.0 | --- | 7.0 |
| 22 | 7.3 | 7.3 | 7.3 | | | | | | | 7.2 | --- | 7.2 |
| 23 | 7.3 | 7.3 | 7.3 | | | | | | | --- | --- | --- |
| 24 | 7.4 | 7.3 | 7.3 | | | | | | | --- | --- | --- |
| 25 | 7.4 | 7.3 | 7.3 | | | | | | | --- | --- | --- |
| 26 | 7.4 | 7.3 | 7.3 | | | | | | | --- | --- | --- |
| 27 | 7.4 | 7.3 | 7.3 | | | | | | | --- | --- | --- |
| 28 | 7.4 | 7.3 | 7.3 | | | | | | | --- | --- | --- |
| 29 | 7.4 | 7.3 | 7.3 | | | | | | | --- | --- | --- |
| 30 | 7.9 | 7.3 | --- | | | | | | | --- | --- | --- |
| 31 | --- | --- | --- | | | | | | | --- | --- | --- |
| MONTH | 7.9 | 6.1 | 7.4 | | | | | | | 7.7 | 7.0 | 7.3 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | --- | --- | --- | 7.5 | 7.4 | 7.4 | 7.5 | 7.4 | 7.5 | 7.3 | 7.2 | 7.3 |
| 2 | --- | --- | --- | 7.5 | 7.5 | 7.5 | 7.5 | 7.4 | 7.4 | 7.6 | 7.2 | 7.4 |
| 3 | --- | --- | --- | 7.6 | 7.5 | 7.5 | 7.5 | 7.2 | 7.4 | 7.5 | 7.3 | 7.4 |
| 4 | --- | --- | --- | 7.6 | 7.5 | 7.5 | 7.4 | 7.3 | 7.4 | 7.3 | 7.2 | 7.3 |
| 5 | --- | --- | --- | 7.5 | 7.4 | 7.4 | 7.4 | 7.3 | 7.4 | 7.3 | 7.3 | 7.3 |
| 6 | --- | --- | --- | 7.6 | 7.5 | 7.5 | 7.4 | 7.3 | 7.3 | 7.3 | 7.2 | 7.3 |
| 7 | --- | --- | --- | 7.5 | 7.4 | 7.5 | 7.5 | 7.3 | 7.4 | 7.3 | 7.2 | 7.3 |
| 8 | --- | --- | --- | 7.5 | 7.4 | 7.4 | 7.5 | 7.4 | 7.5 | 7.6 | 7.2 | 7.4 |
| 9 | --- | --- | --- | 7.4 | 7.3 | 7.4 | 7.5 | 7.4 | 7.5 | 7.3 | 7.2 | 7.3 |
| 10 | --- | --- | --- | 7.4 | 7.3 | 7.3 | 7.6 | 7.4 | 7.4 | 7.3 | 7.2 | 7.3 |
| 11 | --- | --- | --- | 7.5 | 7.3 | 7.4 | 7.5 | 7.4 | 7.4 | 7.3 | 7.2 | 7.2 |
| 12 | --- | --- | --- | 7.5 | 7.4 | 7.4 | 7.5 | 7.4 | 7.5 | 7.3 | 7.2 | 7.2 |
| 13 | --- | --- | --- | 7.4 | 7.3 | 7.4 | 7.6 | 7.5 | 7.6 | 7.2 | 7.2 | 7.2 |
| 14 | --- | --- | --- | 7.4 | 7.4 | 7.4 | 7.7 | 7.5 | 7.6 | 7.4 | 7.2 | 7.2 |
| 15 | --- | --- | --- | 7.5 | 7.4 | 7.4 | 7.7 | 7.5 | 7.6 | 7.6 | 7.2 | 7.4 |
| 16 | --- | --- | --- | 7.5 | 7.3 | 7.4 | 7.6 | 7.5 | 7.5 | 7.6 | 7.3 | 7.5 |
| 17 | --- | --- | --- | 7.5 | 7.3 | 7.4 | 7.6 | 7.5 | 7.5 | 7.5 | 7.4 | 7.5 |
| 18 | --- | --- | --- | 7.5 | 7.5 | 7.5 | 7.5 | 7.4 | 7.5 | 7.5 | 7.3 | 7.4 |
| 19 | --- | --- | --- | 7.6 | 7.4 | 7.5 | 7.5 | 7.4 | 7.4 | 7.4 | 7.2 | 7.4 |
| 20 | --- | --- | --- | 7.6 | 7.5 | 7.5 | 7.5 | 7.3 | 7.4 | 7.4 | 7.3 | 7.4 |
| 21 | 7.6 | 7.5 | --- | 7.7 | 7.5 | 7.6 | 7.4 | 7.3 | 7.4 | 7.4 | 7.2 | 7.3 |
| 22 | 7.6 | 7.5 | 7.5 | 7.6 | 7.5 | 7.6 | 7.4 | 7.3 | 7.4 | 7.3 | 7.2 | 7.3 |
| 23 | 7.6 | 7.6 | 7.6 | 7.6 | 7.4 | 7.5 | 7.3 | 7.3 | 7.3 | 7.4 | 7.2 | 7.3 |
| 24 | 7.7 | 7.6 | 7.6 | 7.5 | 7.4 | 7.5 | 7.7 | 7.2 | 7.3 | 7.4 | 7.2 | 7.3 |
| 25 | 7.7 | 7.7 | 7.7 | 7.5 | 7.4 | 7.4 | 7.9 | 7.2 | 7.3 | 7.3 | 7.2 | 7.2 |
| 26 | 7.9 | 7.7 | 7.8 | 7.5 | 7.4 | 7.4 | 7.4 | 7.2 | 7.3 | 7.3 | 7.2 | 7.2 |
| 27 | 7.8 | 7.7 | 7.7 | 7.4 | 7.3 | 7.3 | 7.4 | 7.3 | 7.4 | 7.3 | 7.2 | 7.3 |
| 28 | 7.7 | 7.4 | 7.6 | 7.4 | 7.3 | 7.4 | 7.4 | 7.3 | 7.4 | 7.3 | 7.2 | 7.2 |
| 29 | 7.4 | 7.4 | 7.4 | 7.5 | 7.4 | 7.5 | 7.4 | 7.2 | 7.3 | 7.2 | 7.2 | 7.2 |
| 30 | --- | --- | --- | 7.5 | 7.4 | 7.5 | 7.3 | 7.2 | 7.3 | 7.3 | 7.2 | 7.3 |
| 31 | --- | --- | --- | 7.5 | 7.4 | 7.4 | --- | --- | --- | 7.3 | 7.2 | 7.3 |
| MONTH | 7.9 | 7.4 | 7.6 | 7.7 | 7.3 | 7.5 | 7.9 | 7.2 | 7.4 | 7.6 | 7.2 | 7.3 |

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 7.3 | 7.2 | 7.3 | 7.4 | 7.3 | 7.3 | 7.5 | 7.4 | 7.4 | 7.7 | 7.5 | 7.6 |
| 2 | 7.3 | 7.2 | 7.3 | 7.4 | 7.3 | 7.3 | 7.6 | 7.4 | 7.5 | 7.7 | 7.5 | 7.5 |
| 3 | 7.3 | 7.3 | 7.3 | 7.6 | 7.3 | 7.5 | 7.5 | 7.4 | 7.5 | 7.6 | 7.5 | 7.5 |
| 4 | 7.3 | 7.3 | 7.3 | 7.4 | 7.3 | 7.3 | 7.6 | 7.4 | 7.5 | 7.6 | 7.4 | 7.5 |
| 5 | 7.3 | 7.3 | 7.3 | 7.5 | 7.3 | 7.4 | 7.6 | 7.4 | 7.5 | 7.6 | 7.4 | 7.5 |
| 6 | 7.3 | 7.2 | 7.3 | 7.4 | 7.3 | 7.3 | 7.6 | 7.4 | 7.4 | 7.7 | 7.5 | 7.5 |
| 7 | 7.3 | 7.2 | 7.2 | 7.8 | 7.3 | 7.5 | 7.6 | 7.4 | 7.5 | 7.6 | 7.5 | 7.5 |
| 8 | 7.2 | 7.2 | 7.2 | 8.1 | 7.4 | 7.6 | 7.6 | 7.4 | 7.5 | 7.6 | 7.5 | 7.5 |
| 9 | 7.3 | 7.2 | 7.2 | 7.7 | 7.3 | 7.5 | 7.6 | 7.4 | 7.5 | 7.5 | 7.2 | 7.4 |
| 10 | 7.3 | 7.2 | 7.2 | 7.8 | 7.3 | 7.5 | 7.5 | 7.4 | 7.4 | 7.5 | 7.3 | 7.4 |
| 11 | 7.3 | 7.2 | 7.2 | 7.5 | 7.3 | 7.4 | 7.4 | 7.4 | 7.4 | --- | --- | --- |
| 12 | 7.3 | 7.2 | 7.2 | 7.4 | 7.2 | 7.3 | 7.5 | 7.4 | 7.4 | --- | --- | --- |
| 13 | 7.3 | 7.2 | 7.2 | 7.3 | 7.3 | 7.3 | 7.5 | 7.4 | 7.4 | --- | --- | --- |
| 14 | 7.3 | 7.2 | 7.2 | 7.4 | 7.2 | 7.3 | 7.6 | 7.4 | 7.5 | --- | --- | --- |
| 15 | 7.2 | 7.2 | 7.2 | 7.6 | 7.3 | 7.4 | 7.7 | 7.5 | 7.5 | --- | --- | --- |
| 16 | 7.3 | 7.2 | 7.2 | 7.6 | 7.4 | 7.5 | 7.7 | 7.5 | 7.5 | --- | --- | --- |
| 17 | 7.3 | 7.3 | 7.3 | 7.6 | 7.3 | 7.4 | 7.6 | 7.5 | 7.5 | --- | --- | --- |
| 18 | 7.3 | 7.3 | 7.3 | 7.6 | 7.4 | 7.4 | 7.7 | 7.5 | 7.5 | --- | --- | --- |
| 19 | 7.3 | 7.2 | 7.3 | 7.5 | 7.4 | 7.4 | 7.6 | 7.4 | 7.5 | --- | --- | --- |
| 20 | 7.4 | 7.2 | 7.2 | 7.7 | 7.4 | 7.5 | 7.7 | 7.4 | 7.5 | --- | --- | --- |
| 21 | 7.3 | 7.2 | 7.2 | 7.5 | 7.4 | 7.5 | 7.6 | 7.4 | 7.5 | --- | --- | --- |
| 22 | 7.3 | 7.2 | 7.3 | 7.6 | 7.4 | 7.5 | 7.6 | 7.4 | 7.5 | 7.6 | 7.5 | 7.6 |
| 23 | 7.4 | 7.2 | 7.3 | 7.5 | 7.4 | 7.4 | 7.6 | 7.4 | 7.5 | 7.6 | 7.5 | 7.6 |
| 24 | 7.3 | 7.2 | 7.3 | 7.5 | 7.4 | 7.4 | 7.6 | 7.5 | 7.5 | 7.6 | 7.5 | 7.5 |
| 25 | 7.3 | 7.2 | 7.2 | 7.4 | 7.4 | 7.4 | 7.6 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| 26 | 7.3 | 7.3 | 7.3 | 7.4 | 7.3 | 7.4 | 7.7 | 7.5 | 7.6 | 7.6 | 7.5 | 7.5 |
| 27 | 7.3 | 7.3 | 7.3 | 7.4 | 7.3 | 7.3 | 7.7 | 7.5 | 7.5 | 7.7 | 7.4 | 7.5 |
| 28 | 7.3 | 7.3 | 7.3 | --- | --- | --- | 7.6 | 7.4 | 7.5 | 7.5 | 7.3 | 7.4 |
| 29 | 7.3 | 7.3 | 7.3 | --- | --- | --- | 7.6 | 7.4 | 7.5 | 7.9 | 7.5 | 7.7 |
| 30 | 7.4 | 7.3 | 7.3 | 7.4 | 7.4 | 7.4 | 7.6 | 7.4 | 7.5 | 7.9 | 7.5 | 7.8 |
| 31 | --- | --- | --- | 7.5 | 7.4 | 7.4 | 7.6 | 7.4 | 7.5 | --- | --- | --- |
| MONTH | 7.4 | 7.2 | 7.3 | 8.1 | 7.2 | 7.4 | 7.7 | 7.4 | 7.5 | 7.9 | 7.2 | 7.5 |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 28.0 | 26.0 | 27.0 | --- | --- | --- | --- | --- | --- | 12.5 | 12.0 | 12.5 |
| 2 | 27.0 | 25.5 | 26.5 | --- | --- | --- | --- | --- | --- | 13.5 | 12.5 | 13.0 |
| 3 | 26.5 | 24.5 | 25.5 | --- | --- | --- | --- | --- | --- | 13.5 | 12.5 | 13.0 |
| 4 | 25.0 | 23.5 | 24.0 | --- | --- | --- | 14.0 | 11.0 | 13.0 | 12.5 | 12.0 | 12.5 |
| 5 | 24.0 | 22.5 | 23.5 | 17.0 | 15.0 | 16.0 | 15.0 | 13.0 | 14.0 | 12.5 | 11.5 | 12.0 |
| 6 | 26.0 | 22.5 | 23.5 | --- | --- | --- | 15.5 | 14.0 | 14.5 | 13.5 | 12.0 | 13.0 |
| 7 | 26.0 | 23.0 | 24.5 | --- | --- | --- | 15.0 | 13.5 | 14.5 | 13.0 | 12.0 | 12.5 |
| 8 | 27.0 | 24.0 | 25.0 | 18.0 | 17.5 | 17.5 | 15.0 | 13.5 | 14.0 | 12.0 | 11.5 | 11.5 |
| 9 | 26.0 | 22.5 | 24.5 | 18.5 | 17.5 | 18.0 | 14.5 | 13.5 | 14.0 | 12.5 | 11.0 | 12.0 |
| 10 | 22.5 | 21.0 | 22.0 | 17.5 | 16.0 | 17.0 | 16.0 | 14.0 | 14.5 | 13.5 | 12.5 | 13.0 |
| 11 | 22.5 | 20.0 | 21.5 | 16.5 | 15.0 | 16.0 | 18.0 | 16.0 | 17.0 | 14.5 | 13.0 | 14.0 |
| 12 | 24.0 | 21.5 | 23.0 | 15.5 | 15.0 | 15.0 | 16.5 | 8.5 | 12.5 | 13.5 | 12.5 | 13.0 |
| 13 | 24.0 | 23.5 | 23.5 | 15.5 | 14.0 | 15.0 | --- | --- | --- | 13.5 | 12.5 | 13.0 |
| 14 | 23.5 | 22.5 | 23.0 | 16.0 | 14.5 | 15.5 | --- | --- | --- | 14.5 | 13.0 | 13.5 |
| 15 | 22.5 | 19.5 | 21.5 | 16.0 | 14.5 | 15.5 | --- | --- | --- | 16.0 | 14.0 | 15.0 |
| 16 | 22.5 | 19.5 | 20.5 | 16.5 | 14.5 | 15.5 | --- | --- | --- | 16.5 | 15.5 | 16.0 |
| 17 | 22.5 | 20.5 | 21.5 | 17.0 | 15.5 | 16.5 | --- | --- | --- | 16.0 | 15.0 | 15.5 |
| 18 | 24.0 | 22.5 | 23.5 | 18.5 | 17.0 | 18.0 | 10.5 | 10.5 | 10.5 | 15.5 | 14.5 | 15.0 |
| 19 | 24.5 | 23.0 | 24.0 | 20.0 | 18.5 | 19.5 | 13.0 | 10.5 | 12.0 | 15.5 | 15.5 | 15.5 |
| 20 | 25.5 | 24.0 | 24.5 | 21.0 | 20.0 | 20.5 | 15.0 | 13.0 | 14.0 | 15.5 | 14.5 | 15.0 |
| 21 | 25.5 | 24.5 | 25.0 | 21.0 | 18.5 | 20.0 | 16.5 | 14.5 | 15.5 | --- | --- | --- |
| 22 | 24.5 | 22.0 | 23.0 | 18.0 | 15.5 | 16.5 | 17.5 | 15.0 | 16.5 | --- | --- | --- |
| 23 | 22.0 | 20.5 | 21.5 | 15.5 | 14.5 | 15.0 | 17.5 | 12.5 | 15.0 | --- | --- | --- |
| 24 | 21.0 | 19.5 | 20.5 | 15.0 | 14.0 | 14.5 | 13.0 | 12.5 | 12.5 | --- | --- | --- |
| 25 | 21.5 | 20.0 | 20.5 | 16.0 | 14.5 | 15.5 | 13.5 | 12.0 | 12.5 | --- | --- | --- |
| 26 | 21.5 | 20.0 | 21.0 | 16.0 | 14.5 | 15.5 | 14.0 | 12.5 | 13.5 | --- | --- | --- |
| 27 | 22.0 | 20.5 | 21.5 | 17.0 | 15.5 | 16.0 | 15.0 | 14.0 | 14.5 | --- | --- | --- |
| 28 | 23.0 | 21.5 | 22.0 | 16.0 | --- | 15.5 | 15.5 | 14.5 | 15.0 | --- | --- | --- |
| 29 | 22.5 | 21.0 | 22.0 | --- | --- | --- | 15.5 | 13.0 | 14.5 | --- | --- | --- |
| 30 | 22.0 | 16.5 | 20.0 | --- | --- | --- | 13.0 | 12.5 | 13.0 | --- | --- | --- |
| 31 | --- | --- | --- | --- | --- | --- | 13.0 | 12.0 | 12.5 | 9.5 | 9.0 | 9.5 |
| MONTH | 28.0 | 16.5 | 23.0 | 21.0 | 14.0 | 16.5 | 18.0 | 8.5 | 14.0 | 16.5 | 9.0 | 13.5 |

## 08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 10.0 | 8.5 | 9.0 | 16.0 | 12.0 | 14.0 | 19.0 | 17.0 | 18.0 | 22.5 | 21.0 | 21.5 |
| 2 | 10.0 | 9.5 | 10.0 | 12.0 | 10.5 | 11.0 | 20.0 | 18.5 | 19.5 | 22.0 | 18.5 | 20.5 |
| 3 | 10.5 | 8.5 | 9.5 | 12.0 | 10.0 | 11.0 | 19.5 | 17.5 | 18.5 | 21.0 | 18.5 | 20.0 |
| 4 | 11.5 | 9.0 | 10.0 | 15.5 | 12.0 | 14.0 | 19.0 | 17.0 | 18.0 | 23.0 | 20.0 | 21.5 |
| 5 | 13.0 | 10.5 | 11.5 | 15.0 | 13.5 | 14.5 | 19.0 | 17.5 | 18.5 | 24.0 | 21.5 | 23.0 |
| 6 | 12.5 | 11.0 | 12.0 | 15.0 | 13.0 | 14.0 | 19.5 | 17.5 | 18.5 | 24.5 | 22.5 | 23.5 |
| 7 | 12.5 | 11.5 | 12.0 | 18.5 | 15.0 | 17.0 | 21.5 | 19.0 | 20.0 | 24.5 | 22.5 | 23.5 |
| 8 | 12.0 | --- | 10.5 | 18.0 | 16.5 | 17.0 | 20.5 | 19.0 | 20.0 | 24.0 | 19.5 | 22.5 |
| 9 | --- | --- | --- | 17.0 | 15.5 | 16.0 | 20.5 | 18.0 | 19.5 | 21.0 | 19.0 | 20.5 |
| 10 | --- | --- | --- | 17.5 | 16.0 | 17.0 | 20.0 | 18.0 | 19.5 | 24.0 | 21.0 | 22.0 |
| 11 | --- | --- | --- | 17.0 | 16.5 | 17.0 | 20.5 | 19.0 | 20.0 | 25.0 | 23.0 | 24.0 |
| 12 | --- | --- | --- | 18.5 | 16.0 | 17.5 | 20.0 | 15.5 | 18.0 | 25.5 | 23.5 | 24.5 |
| 13 | --- | --- | --- | 18.5 | 17.0 | 17.5 | 15.5 | 12.5 | 13.5 | 24.5 | 24.0 | 24.5 |
| 14 | --- | 11.0 | 12.0 | 17.5 | 16.0 | 17.0 | 13.5 | 11.0 | 12.5 | 24.0 | 22.5 | 23.5 |
| 15 | 13.5 | 11.5 | 12.5 | 18.0 | 16.0 | 17.0 | 17.0 | 13.5 | 15.0 | 22.5 | 20.5 | 22.0 |
| 16 | 12.5 | 10.0 | 11.0 | 19.0 | 17.5 | 18.5 | 19.0 | 15.5 | 17.5 | 22.0 | 20.5 | 21.0 |
| 17 | 10.5 | 9.0 | 10.0 | 19.0 | 16.5 | 17.5 | 20.0 | 17.5 | 19.0 | 24.0 | 22.0 | 23.0 |
| 18 | 10.5 | 8.5 | 9.5 | 17.0 | 15.0 | 16.0 | 20.0 | 18.0 | 19.0 | 25.5 | 23.5 | 24.5 |
| 19 | 13.0 | 9.5 | 11.5 | 17.0 | 16.0 | 16.5 | 21.0 | 18.0 | 19.5 | 25.5 | 24.0 | 24.5 |
| 20 | 15.0 | 12.5 | 14.0 | 18.0 | 16.5 | 17.0 | 22.0 | 19.0 | 20.5 | 25.5 | 23.5 | 24.5 |
| 21 | 16.5 | 14.5 | 15.5 | 18.0 | 16.0 | 17.0 | 22.5 | 19.5 | 21.0 | 25.0 | 23.0 | 24.0 |
| 22 | 17.0 | 15.0 | 16.0 | 17.5 | 16.0 | 17.0 | 22.5 | 20.5 | 21.5 | 25.0 | 23.5 | 24.0 |
| 23 | 16.5 | 15.5 | 16.0 | 17.5 | 16.5 | 17.0 | 22.5 | 20.5 | 22.0 | 25.0 | 23.0 | 24.0 |
| 24 | 16.5 | 15.0 | 15.5 | 17.5 | 15.5 | 16.5 | 22.5 | 20.0 | 22.0 | 25.5 | 24.0 | 25.0 |
| 25 | 15.0 | 13.5 | 14.5 | 16.5 | 15.5 | 16.0 | 22.0 | 19.0 | 21.0 | 28.0 | 25.0 | 26.5 |
| 26 | 14.0 | 12.5 | 13.5 | 17.0 | 15.5 | 16.5 | 19.5 | 18.5 | 19.0 | 28.5 | 26.0 | 27.5 |
| 27 | 15.5 | 13.0 | 14.0 | 17.0 | 15.0 | 17.0 | 19.5 | 17.5 | 18.5 | 28.0 | 27.0 | 27.5 |
| 28 | 17.0 | 14.5 | 16.0 | 16.5 | 14.5 | 16.0 | 20.0 | 17.5 | 19.0 | 28.5 | 26.5 | 27.5 |
| 29 | 18.0 | 16.5 | 17.0 | 17.5 | 15.5 | 16.5 | 22.0 | 18.5 | 20.0 | 28.0 | 27.0 | 27.5 |
| 30 | --- | --- | --- | 18.0 | 16.0 | 17.0 | 21.5 | 20.5 | 21.0 | 28.0 | 26.5 | 27.0 |
| 31 | --- | --- | --- | 18.0 | 16.0 | 17.0 | --- | --- | --- | 28.0 | 26.5 | 27.5 |
| MONTH | 18.0 | 8.5 | 12.5 | 19.0 | 10.0 | 16.0 | 22.5 | 11.0 | 19.0 | 28.5 | 18.5 | 24.0 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 28.0 | 26.5 | 27.0 | 32.0 | 30.0 | 31.0 | 31.5 | 29.5 | 30.5 | 30.5 | 28.5 | 29.5 |
| 2 | 28.0 | 26.0 | 27.0 | 32.5 | 30.0 | 31.5 | 31.5 | 29.5 | 30.5 | 30.5 | 29.0 | 30.0 |
| 3 | 28.0 | 26.0 | 27.0 | 32.0 | 30.0 | 31.5 | 31.0 | 29.5 | 30.5 | 30.5 | 29.0 | 30.0 |
| 4 | 28.5 | 26.5 | 27.5 | 32.0 | 30.0 | 31.0 | 30.0 | 29.0 | 29.5 | 30.5 | 29.0 | 30.0 |
| 5 | 29.0 | 27.0 | 28.0 | 32.0 | 30.0 | 31.0 | 30.5 | 28.5 | 29.0 | 31.0 | 29.5 | 30.0 |
| 6 | 29.0 | 27.5 | 28.5 | 32.5 | 30.5 | 31.5 | 31.0 | 28.5 | 29.5 | 30.0 | 29.0 | 29.5 |
| 7 | 29.5 | 27.5 | 28.5 | 32.0 | 30.5 | 31.0 | 31.5 | 29.5 | 30.5 | 29.5 | 28.5 | 29.0 |
| 8 | 29.0 | 27.5 | 28.5 | 32.0 | 30.0 | 31.0 | 31.5 | 29.5 | 30.5 | 29.0 | 28.0 | 28.5 |
| 9 | 27.5 | 26.5 | 27.0 | 32.0 | 30.0 | 31.0 | 31.5 | 30.0 | 30.5 | 29.0 | 28.0 | 28.0 |
| 10 | 28.0 | 26.0 | 27.0 | 32.0 | 30.0 | 31.5 | 30.5 | 30.0 | 30.5 | 29.0 | 27.0 | 28.0 |
| 11 | 28.5 | 26.0 | 27.5 | 32.0 | 30.0 | 31.5 | 30.0 | 29.0 | 29.5 | --- | --- | --- |
| 12 | 28.5 | 26.5 | 27.5 | 32.5 | 30.0 | 31.5 | 30.5 | 29.0 | 29.5 | --- | --- | --- |
| 13 | 28.5 | 27.0 | 27.5 | 32.0 | 30.5 | 31.5 | 30.5 | 29.5 | 30.0 | --- | --- | --- |
| 14 | 28.5 | 26.5 | 27.5 | 32.0 | 30.0 | 31.0 | 31.0 | 29.0 | 30.0 | --- | --- | --- |
| 15 | 29.0 | 27.0 | 28.0 | 32.0 | 30.0 | 31.5 | 30.5 | 29.5 | 30.0 | --- | --- | --- |
| 16 | 29.5 | 27.5 | 28.5 | 32.5 | 30.0 | 31.0 | 31.0 | 29.0 | 30.0 | --- | --- | --- |
| 17 | 29.5 | 27.5 | 28.5 | 32.0 | 30.0 | 31.0 | 31.0 | 29.0 | 30.0 | --- | --- | --- |
| 18 | 30.0 | 27.5 | 29.0 | 32.0 | 30.0 | 31.0 | 30.5 | 29.0 | 30.0 | --- | --- | --- |
| 19 | 31.0 | 29.0 | 30.0 | 32.0 | 30.5 | 31.5 | 31.0 | 29.0 | 30.0 | --- | --- | --- |
| 20 | 30.5 | 27.5 | 29.0 | 32.0 | 30.5 | 31.5 | 31.0 | 29.0 | 30.0 | --- | --- | --- |
| 21 | 31.0 | 27.5 | 29.5 | 31.5 | 30.5 | 31.0 | 31.5 | 29.5 | 30.5 | --- | --- | --- |
| 22 | 30.0 | 29.0 | 29.5 | 31.5 | 29.5 | 30.5 | 31.5 | 30.0 | 31.0 | --- | --- | --- |
| 23 | 31.0 | 28.5 | 29.5 | 31.0 | 29.0 | 30.0 | 32.0 | 30.0 | 31.0 | 29.0 | 28.0 | 28.5 |
| 24 | 31.5 | 29.5 | 30.5 | 31.0 | 29.0 | 30.0 | 31.5 | 30.0 | 31.0 | 28.0 | 27.0 | 27.5 |
| 25 | 32.0 | 30.0 | 31.0 | 31.0 | 29.5 | 30.0 | 31.0 | 29.0 | 30.0 | 28.0 | 27.5 | 27.5 |
| 26 | 32.0 | 30.0 | 31.5 | 31.5 | 30.0 | 30.5 | 31.0 | 29.0 | 30.0 | 27.5 | 23.5 | 26.5 |
| 27 | 32.5 | 30.0 | 31.5 | 31.5 | 30.0 | 30.5 | 31.0 | 29.5 | 30.0 | 24.0 | 22.5 | 23.5 |
| 28 | 32.5 | 30.5 | 31.5 | --- | --- | --- | 30.0 | 28.5 | 29.0 | 23.0 | 21.0 | 22.0 |
| 29 | 32.0 | 30.0 | 31.0 | --- | --- | --- | 29.5 | 27.5 | 28.5 | 21.0 | 18.0 | 19.5 |
| 30 | 32.0 | 30.0 | 31.0 | 32.0 | 30.5 | 31.5 | 30.0 | 28.0 | 29.0 | 20.5 | 19.0 | 19.5 |
| 31 | --- | --- | --- | 32.0 | 29.5 | 31.0 | 30.5 | 28.5 | 29.5 | --- | --- | --- |
| MONTH | 32.5 | 26.0 | 29.0 | 32.5 | 29.0 | 31.0 | 32.0 | 27.5 | 30.0 | 31.0 | 18.0 | 27.0 |

## 08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

### OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | |
| 1 | 5.2 | .9 | 2.6 | --- | --- | --- | --- | --- | --- | 6.6 | 4.5 | 5.7 |
| 2 | 5.1 | 1.1 | 2.7 | --- | --- | --- | --- | --- | --- | 5.9 | 4.9 | 5.5 |
| 3 | 5.3 | 1.3 | 2.9 | --- | --- | --- | --- | --- | --- | 6.6 | 2.9 | 4.7 |
| 4 | 7.7 | 1.3 | 3.3 | --- | --- | --- | --- | --- | --- | 6.6 | 4.4 | 5.3 |
| 5 | 6.2 | 1.1 | 3.0 | --- | --- | --- | 5.6 | 2.7 | 3.8 | 6.5 | 3.0 | 4.0 |
| 6 | 9.2 | .8 | 4.9 | --- | --- | --- | 4.9 | 2.0 | 3.1 | 5.3 | 1.8 | 3.1 |
| 7 | 9.3 | .8 | 5.6 | --- | --- | --- | 4.5 | 1.7 | 2.8 | 4.5 | .6 | 1.9 |
| 8 | 9.3 | 1.0 | 5.7 | 4.9 | 3.4 | 4.2 | --- | 1.7 | 3.0 | 4.2 | 2.1 | 2.9 |
| 9 | 9.5 | 1.1 | 5.5 | 4.6 | 3.1 | 3.7 | --- | 1.9 | 2.8 | 4.8 | .8 | 2.3 |
| 10 | 9.4 | 1.8 | 6.6 | 4.6 | 3.5 | 4.1 | --- | 1.7 | 2.5 | 3.2 | .8 | 1.6 |
| 11 | 5.0 | 1.6 | 3.1 | 4.6 | 4.0 | 4.2 | 3.7 | 1.3 | 2.1 | 3.3 | .3 | 1.3 |
| 12 | 4.7 | 1.4 | 2.8 | 5.1 | 4.2 | 4.6 | 9.2 | .0 | 4.4 | 2.9 | .1 | 1.2 |
| 13 | 4.6 | 1.4 | 2.7 | 5.6 | 4.2 | 4.9 | --- | .0 | --- | 2.9 | .5 | 1.4 |
| 14 | 4.7 | 1.5 | 2.8 | 4.8 | 3.7 | 4.3 | --- | --- | --- | 3.9 | .2 | 1.9 |
| 15 | 6.6 | 1.4 | 2.7 | 4.8 | 3.4 | 4.0 | --- | --- | --- | 3.2 | 1.5 | 2.5 |
| 16 | 4.0 | .0 | 2.6 | 4.8 | 3.1 | 3.8 | --- | --- | --- | 3.4 | .9 | 1.9 |
| 17 | 4.4 | 3.7 | 3.9 | 5.2 | 2.7 | 3.7 | --- | --- | --- | 2.0 | .1 | .8 |
| 18 | 3.9 | 1.8 | 2.8 | 5.5 | 2.3 | 3.1 | 6.0 | 5.0 | 5.4 | 1.8 | .6 | 1.0 |
| 19 | 2.5 | 1.2 | 1.9 | 7.6 | 1.5 | 2.9 | 6.1 | 2.7 | 4.3 | .9 | .1 | .5 |
| 20 | 2.3 | 1.1 | 1.7 | --- | 1.0 | 3.0 | 3.8 | .7 | 2.2 | 3.1 | .2 | 1.0 |
| 21 | 2.3 | 1.6 | 1.9 | --- | .6 | 3.1 | 3.2 | .8 | 1.9 | 5.2 | --- | 2.7 |
| 22 | 2.8 | 1.6 | 2.2 | 1.3 | .1 | .7 | 5.8 | .5 | 2.4 | --- | --- | --- |
| 23 | 2.8 | 1.6 | 2.2 | 1.5 | .1 | 1.0 | 8.3 | .3 | 4.0 | --- | --- | --- |
| 24 | 3.8 | 2.7 | 3.3 | 2.1 | 1.0 | 1.4 | 7.4 | 3.8 | 6.0 | --- | --- | --- |
| 25 | 4.0 | 2.2 | 3.1 | 2.4 | 1.0 | 1.5 | 7.2 | 6.7 | 7.1 | --- | --- | --- |
| 26 | 3.8 | 2.0 | 2.7 | --- | --- | --- | 7.0 | 6.6 | 6.7 | --- | --- | --- |
| 27 | 3.7 | 1.5 | 2.7 | --- | --- | --- | 6.6 | 5.9 | 6.3 | --- | --- | --- |
| 28 | 3.3 | .7 | 2.0 | --- | --- | --- | 6.8 | 4.6 | 5.9 | --- | --- | --- |
| 29 | 3.5 | 1.8 | 2.6 | --- | --- | --- | 6.5 | 2.6 | 4.8 | --- | --- | --- |
| 30 | --- | --- | --- | --- | --- | --- | 6.8 | 5.0 | 6.1 | --- | --- | --- |
| 31 | --- | --- | --- | --- | --- | --- | 6.7 | 5.7 | 6.1 | 9.4 | 9.2 | 9.3 |
| MONTH | 9.5 | .0 | 3.2 | 7.6 | .1 | 3.2 | 9.2 | .0 | 4.3 | 9.4 | .1 | 2.8 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FEBRUARY | | | MARCH | | | APRIL | | | MAY | | |
| 1 | 9.2 | 8.9 | 9.1 | 7.6 | 5.3 | 6.6 | 5.5 | 3.9 | 5.1 | 2.2 | .5 | 1.3 |
| 2 | 9.7 | 9.1 | 9.4 | 7.8 | 6.5 | 7.3 | 4.7 | 3.4 | 4.0 | 7.6 | .3 | 3.9 |
| 3 | 10.1 | 9.3 | 9.6 | 7.8 | 7.4 | 7.6 | 5.2 | .0 | 3.2 | 3.9 | 3.3 | 3.6 |
| 4 | 10.0 | 8.4 | 9.6 | 7.3 | 5.6 | 6.3 | 5.4 | 3.3 | 4.6 | 3.4 | .6 | 2.4 |
| 5 | 9.6 | 7.1 | 9.2 | 6.6 | 4.7 | 5.5 | 5.4 | 2.7 | 4.3 | 3.7 | 2.8 | 3.3 |
| 6 | 10.1 | 8.2 | 8.8 | 6.4 | 4.0 | 5.3 | 4.8 | 3.3 | 4.0 | 3.0 | 1.5 | 2.6 |
| 7 | 9.8 | 6.3 | 7.9 | 6.5 | 4.1 | 5.1 | 4.8 | 2.8 | 4.2 | 3.7 | 2.1 | 2.8 |
| 8 | 10.7 | 6.0 | 7.8 | 5.1 | 2.9 | 3.5 | 5.0 | 2.2 | 4.4 | 6.4 | 2.9 | 4.0 |
| 9 | --- | --- | --- | 4.2 | 2.2 | 3.5 | 5.4 | 2.4 | 4.3 | 4.6 | 2.7 | 3.6 |
| 10 | --- | --- | --- | 3.8 | 2.1 | 2.8 | 4.7 | 2.2 | 3.7 | 3.7 | 2.5 | 3.1 |
| 11 | --- | --- | --- | 3.6 | 1.7 | 2.7 | 4.4 | 2.3 | 3.2 | 2.7 | 1.2 | 1.7 |
| 12 | --- | --- | --- | 3.4 | 2.1 | 2.9 | 4.9 | 2.4 | 3.9 | 1.8 | .9 | 1.4 |
| 13 | --- | --- | --- | 2.8 | .1 | 2.1 | 7.0 | 4.2 | 5.8 | 1.3 | .9 | 1.1 |
| 14 | 9.5 | .5 | 5.3 | 4.4 | 2.9 | 3.5 | 7.2 | 5.7 | 6.7 | 5.5 | 1.2 | 1.5 |
| 15 | 9.5 | 8.6 | 9.1 | 5.2 | 3.1 | 4.2 | 6.7 | 5.5 | 6.2 | 7.5 | 1.0 | 4.5 |
| 16 | 9.2 | 8.5 | 8.9 | 4.0 | .1 | 1.8 | 6.0 | 4.3 | 5.3 | 8.3 | 3.9 | 6.7 |
| 17 | 9.5 | 9.0 | 9.3 | 4.4 | .1 | 2.8 | 5.1 | 3.2 | 4.4 | 6.4 | 5.1 | 6.1 |
| 18 | 9.9 | 9.1 | 9.5 | 4.7 | 3.2 | 4.2 | 5.1 | 2.6 | 4.2 | 5.8 | 1.9 | 4.7 |
| 19 | 9.1 | 8.2 | 8.8 | 5.0 | 2.7 | 3.9 | 4.4 | 2.4 | 3.3 | 5.3 | 2.0 | 4.7 |
| 20 | 8.1 | 6.6 | 7.3 | 5.5 | 3.4 | 4.5 | 4.1 | .3 | 3.0 | 5.5 | 4.1 | 5.1 |
| 21 | 7.0 | 6.2 | 6.7 | 6.3 | 4.0 | 5.3 | 3.5 | 1.5 | 2.7 | 4.9 | 2.3 | 3.8 |
| 22 | 6.5 | 5.8 | 6.1 | 6.3 | 5.3 | 5.7 | 3.1 | 2.1 | 2.9 | 3.6 | 2.0 | 2.8 |
| 23 | 6.2 | 5.7 | 5.9 | 5.7 | 4.2 | 4.9 | 3.2 | 1.7 | 2.3 | 3.2 | .7 | 2.5 |
| 24 | 6.4 | 4.6 | 5.6 | 5.5 | 4.0 | 4.5 | 5.3 | 1.1 | 1.9 | 3.1 | .9 | 1.9 |
| 25 | 6.6 | 5.9 | 6.3 | 5.7 | 3.1 | 4.8 | 5.8 | .8 | 3.2 | 1.6 | .3 | .9 |
| 26 | 6.3 | 5.6 | 6.0 | 5.1 | 2.9 | 3.7 | 4.6 | 1.3 | 3.2 | 1.0 | .4 | .7 |
| 27 | 5.9 | 4.8 | 5.4 | 5.1 | 1.2 | 2.8 | 5.4 | 3.3 | 4.8 | .9 | .4 | .7 |
| 28 | 7.5 | 4.6 | 6.1 | 4.9 | .8 | 3.4 | 5.3 | 3.9 | 4.8 | .9 | .3 | .7 |
| 29 | 7.1 | 5.0 | 6.2 | 6.6 | 2.9 | 5.6 | 5.0 | .7 | 3.7 | .5 | .1 | .3 |
| 30 | --- | --- | --- | 6.5 | 4.4 | 5.6 | 3.1 | .8 | 2.5 | .4 | .1 | .2 |
| 31 | --- | --- | --- | 5.4 | 3.9 | 4.8 | --- | --- | --- | .5 | .0 | .2 |
| MONTH | 10.7 | .5 | 7.7 | 7.8 | .1 | 4.4 | 7.2 | .0 | 4.0 | 8.3 | .0 | 2.7 |

## 08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

### OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | .7 | .0 | .3 | 3.8 | .8 | 1.7 | 1.9 | .1 | .7 | 4.2 | .2 | 1.5 |
| 2 | 1.2 | .1 | .6 | 2.4 | .9 | 1.3 | 3.4 | .1 | 1.0 | 3.9 | .3 | 1.4 |
| 3 | 1.4 | .4 | .8 | 5.6 | .9 | 2.5 | 2.3 | .1 | .7 | 4.1 | .4 | 1.6 |
| 4 | 1.7 | .5 | .9 | 1.3 | .7 | .9 | 2.1 | .1 | .6 | 3.9 | .4 | 1.5 |
| 5 | 1.5 | .5 | .8 | 4.8 | .7 | 1.6 | 2.9 | .2 | 1.0 | 3.9 | .3 | 1.3 |
| 6 | .9 | .2 | .4 | .9 | .5 | .7 | 2.8 | .2 | 1.0 | 4.1 | .2 | 1.4 |
| 7 | .6 | .0 | .2 | 8.6 | 1.0 | 3.9 | 2.5 | .2 | .9 | 2.4 | .3 | .9 |
| 8 | .3 | .0 | .1 | 12.3 | 2.2 | 6.6 | 2.6 | .1 | .9 | 2.4 | .3 | .8 |
| 9 | .4 | .0 | .1 | 10.7 | 2.6 | 6.3 | 2.2 | .1 | .8 | 1.6 | .0 | .3 |
| 10 | .7 | .1 | .3 | 11.6 | 1.9 | 6.2 | 1.5 | .0 | .4 | 6.5 | .5 | 3.1 |
| 11 | .9 | .1 | .4 | 7.9 | 1.0 | 3.9 | .5 | .0 | .2 | --- | --- | --- |
| 12 | 1.0 | .3 | .5 | 7.0 | .7 | 3.2 | 1.0 | .0 | .3 | --- | --- | --- |
| 13 | .8 | .2 | .4 | 3.4 | .4 | 1.3 | 3.0 | .0 | 1.0 | --- | --- | --- |
| 14 | .7 | .1 | .3 | 5.0 | .5 | 2.4 | 3.6 | .4 | 1.4 | --- | --- | --- |
| 15 | .8 | .1 | .3 | 8.0 | .6 | 3.5 | 3.2 | .4 | 1.3 | --- | --- | --- |
| 16 | .9 | .0 | .2 | 7.4 | 1.0 | 3.5 | 3.7 | .5 | 1.4 | --- | --- | --- |
| 17 | 1.0 | .1 | .4 | 5.6 | 1.0 | 2.7 | 3.6 | .5 | 1.4 | --- | --- | --- |
| 18 | .5 | .0 | .2 | 5.0 | .9 | 2.3 | 3.9 | .5 | 1.6 | --- | --- | --- |
| 19 | .4 | .0 | .2 | 4.5 | .8 | 2.1 | 4.4 | .5 | 1.7 | --- | --- | --- |
| 20 | 1.8 | .0 | .4 | 6.0 | .9 | 2.8 | 4.0 | .4 | 1.6 | --- | --- | --- |
| 21 | .4 | .0 | .2 | 3.4 | 1.0 | 1.9 | 3.3 | .3 | 1.2 | --- | --- | --- |
| 22 | 1.7 | .0 | .4 | 3.9 | 1.2 | 2.3 | 2.7 | .2 | 1.0 | --- | --- | --- |
| 23 | 1.5 | .0 | .4 | 2.7 | 1.4 | 1.9 | 2.7 | .2 | 1.0 | 2.5 | 1.1 | 1.7 |
| 24 | .9 | .0 | .3 | 2.2 | 1.0 | 1.5 | 2.9 | .1 | 1.0 | 2.0 | 1.2 | 1.6 |
| 25 | .4 | .0 | .2 | 2.1 | 1.0 | 1.4 | 3.2 | .1 | 1.0 | 1.3 | .7 | .9 |
| 26 | 1.7 | .0 | .6 | 1.9 | .6 | 1.1 | 3.5 | .2 | 1.3 | 1.7 | .6 | .8 |
| 27 | .5 | .0 | .4 | 1.3 | .6 | --- | 3.6 | .3 | 1.4 | 2.1 | .5 | 1.2 |
| 28 | .5 | .4 | .5 | --- | --- | .8 | 2.9 | .3 | .7 | 1.6 | .4 | .8 |
| 29 | .8 | .2 | .4 | --- | --- | --- | 3.0 | .1 | 1.0 | 4.1 | 1.7 | 3.6 |
| 30 | .8 | .3 | .5 | 1.5 | .0 | .7 | 3.1 | .2 | 1.1 | 5.0 | 3.3 | 4.1 |
| 31 | --- | --- | --- | 2.0 | .1 | .7 | 3.7 | .2 | 1.3 | --- | --- | --- |
| MONTH | 1.8 | .0 | .4 | 12.3 | .0 | 2.5 | 4.4 | .0 | 1.0 | 6.5 | .0 | 1.6 |

## 08049600 MOUNTAIN CREEK NEAR CEDAR HILL, TX

**LOCATION.**--Lat 32°35'03", long 97°01'23", Dallas County, Hydrologic Unit 12030102, on left bank at downstream side of county road bridge, 3.5 mi (5.6 km) downstream from Texas and New Orleans Railroad Co. bridge, 4.5 mi (7.2 km) southwest of Cedar Hill, and 12 mi (19 km) upstream from Mountain Creek Lake Dam.

**DRAINAGE AREA.**--119 $mi^2$ (308 $km^2$).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1960 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 478.31 ft (145.789 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 25, 1960, nonrecording gage at same site and datum.

**REMARKS.**--Water-discharge records good. At end of year, flow from 14.2 $mi^2$ (36.8 $km^2$) above this station was affected at times by discharge from the flood-detention pools of three floodwater-retarding structures with a combined detention capacity of 5,550 acre-ft (6.84 $hm^3$). Dallas Power and Light Co. gage-height telemeter is located at station.

**AVERAGE DISCHARGE.**--20 years, 48.9 $ft^3/s$ (1.385 $m^3/s$), 35,430 acre-ft/yr (43.7 $hm^3/yr$).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 28,300 $ft^3/s$ (801 $m^3/s$) May 7, 1969, gage height, 25.10 ft (7.650 m), from rating curve extended above 14,000 $ft^3/s$ (396 $m^3/s$); maximum gage height, 25.11 ft (7.654 m) May 3, 1979; no flow at times each year.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since at least 1910, 30 ft (9.1 m) May 25, 1922, from information by local resident.

**EXTREMES FOR CURRENT YEAR.**--Peak discharges above base of 1,500 $ft^3/s$ (42.5 $m^3/s$) and maximum (*):

| Date | Time | Discharge ($ft^3/s$) | Discharge ($m^3/s$) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| Jan. 22 | 1830 | 2,280 | 64.6 | 18.04 | 5.499 |
| May 16 | 0400 | *3,870 | 110 | 19.89 | 6.062 |

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .00 | .00 | 2.1 | 6.8 | .92 | 3.1 | 1.2 | 1.2 | .00 | .00 | .00 |
| 2 | .00 | .00 | .00 | 1.9 | 6.0 | .64 | 2.2 | 2.2 | .84 | .00 | .00 | .00 |
| 3 | .00 | .18 | .00 | 1.5 | 5.2 | .64 | 65 | 11 | .58 | .00 | .00 | .00 |
| 4 | .00 | .09 | .00 | 1.2 | 3.4 | .77 | 24 | 6.2 | .42 | .00 | .00 | .00 |
| 5 | .00 | .04 | .00 | .81 | 2.8 | .77 | 9.5 | 3.7 | .27 | .00 | .00 | .00 |
| 6 | .00 | .02 | .00 | .77 | 2.3 | .70 | 4.5 | 39 | .12 | .00 | .00 | .00 |
| 7 | .00 | .01 | .00 | .76 | 1.8 | .64 | 3.2 | 21 | .06 | .00 | .00 | .00 |
| 8 | .00 | .01 | .00 | .99 | 16 | .58 | 2.0 | 5.6 | .04 | .00 | .00 | .00 |
| 9 | .00 | .01 | .00 | .62 | 80 | .58 | .94 | 3.1 | .03 | .00 | .00 | .00 |
| 10 | .00 | .01 | .00 | .52 | 49 | .64 | .43 | 1.4 | .01 | .00 | .00 | .00 |
| 11 | .00 | .00 | .00 | .58 | 66 | .58 | .33 | .94 | .00 | .00 | .00 | .00 |
| 12 | .00 | .00 | .00 | .68 | 44 | 1.0 | .39 | 1.2 | .00 | .00 | .00 | .00 |
| 13 | .00 | .00 | .00 | .70 | 24 | 2.2 | 21 | 1.2 | .00 | .00 | .00 | .00 |
| 14 | .00 | .00 | .02 | .55 | 15 | 2.5 | 129 | 2.5 | .00 | .00 | .00 | .00 |
| 15 | .00 | .04 | .02 | .52 | 12 | 1.5 | 41 | 538 | .00 | .00 | .00 | .00 |
| 16 | .00 | .02 | .00 | .53 | 9.0 | 1.3 | 20 | 1810 | .00 | .00 | .00 | .00 |
| 17 | .00 | .00 | .00 | .81 | 6.8 | 1.1 | 11 | 130 | .00 | .00 | .00 | .00 |
| 18 | .00 | .00 | .00 | .64 | 6.0 | .84 | 5.3 | 73 | .00 | .00 | .00 | .00 |
| 19 | .00 | .00 | .00 | .49 | 6.0 | .58 | 2.7 | 45 | .00 | .00 | .00 | .00 |
| 20 | .00 | .00 | .01 | .69 | 4.4 | .42 | 1.6 | 30 | .00 | .00 | .00 | .00 |
| 21 | .00 | .00 | .01 | 100 | 3.8 | .27 | .89 | 25 | .00 | .00 | .00 | .00 |
| 22 | .00 | .00 | .07 | 1140 | 3.2 | .21 | .57 | 19 | .00 | .00 | .00 | .00 |
| 23 | .00 | .00 | 82 | 370 | 2.5 | .16 | .29 | 15 | .00 | .00 | .00 | .00 |
| 24 | .00 | .00 | 192 | 97 | 2.2 | .38 | 16 | 12 | .00 | .00 | .00 | .00 |
| 25 | .00 | .00 | 31 | 68 | 1.8 | .34 | 139 | 8.7 | .00 | .00 | .00 | .00 |
| 26 | .00 | .00 | 16 | 43 | 1.5 | .27 | 34 | 6.5 | .00 | .00 | .00 | .00 |
| 27 | .00 | .00 | 10 | 20 | 1.3 | .38 | 14 | 4.9 | .00 | .00 | .00 | .00 |
| 28 | .00 | .00 | 6.6 | 11 | 1.3 | 6.5 | 7.1 | 4.0 | .00 | .00 | .00 | .00 |
| 29 | .00 | .00 | 4.5 | 8.7 | 1.3 | 17 | 3.1 | 3.0 | .00 | .00 | .00 | 35 |
| 30 | .00 | .00 | 3.3 | 7.6 | --- | 8.7 | 1.5 | 2.2 | .00 | .00 | .00 | 23 |
| 31 | .00 | --- | 2.7 | 7.8 | --- | 4.7 | --- | 1.8 | --- | .00 | .00 | --- |
| TOTAL | .00 | .43 | 348.23 | 1890.46 | 385.4 | 57.81 | 563.64 | 2828.34 | 3.57 | .00 | .00 | 58.00 |
| MEAN | .000 | .014 | 11.2 | 61.0 | 13.3 | 1.86 | 18.8 | 91.2 | .12 | .000 | .000 | 1.93 |
| MAX | .00 | .18 | 192 | 1140 | 80 | 17 | 139 | 1810 | 1.2 | .00 | .00 | 35 |
| MIN | .00 | .00 | .00 | .49 | 1.3 | .16 | .29 | .94 | .00 | .00 | .00 | .00 |
| AC-FT | .00 | .9 | 691 | 3750 | 764 | 115 | 1120 | 5610 | 7.1 | .00 | .00 | 115 |

CAL YR 1979 TOTAL 20925.11 MEAN 57.3 MAX 5120 MIN .00 AC-FT 41500
WTR YR 1980 TOTAL 6135.88 MEAN 16.8 MAX 1810 MIN .00 AC-FT 12170

## 08049600 MOUNTAIN CREEK NEAR CEDAR HILL, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: September 1974 to current year. Sediment analyses: October 1976 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH (UNITS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | 1115 | .00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| NOV 08... | 0910 | .01 | 1060 | 7.4 | 10.5 | 30 | .80 | 4.0 | 36 | 7.1 | 340 | 190 |
| DEC 10... | -- | .00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 10... | 1445 | .77 | 950 | 8.0 | 8.0 | 30 | 4.7 | 11.8 | 101 | 5.0 | 250 | 100 |
| FEB 14... | 0900 | 19 | 970 | 8.0 | 8.0 | 30 | 25 | 11.2 | 94 | 2.7 | 340 | 200 |
| MAR 20... | 1130 | .53 | 1500 | 7.8 | 15.0 | 20 | 7.0 | 8.0 | 80 | 1.3 | 480 | 310 |
| APR 17... | 1300 | 13 | 1110 | 8.0 | 18.0 | 20 | 31 | -- | -- | -- | -- | -- |
| MAY 15... | 0920 | 168 | 1120 | 7.8 | 20.0 | 20 | 680 | 7.2 | 80 | 5.5 | 290 | 130 |
| JUN 05... | 0930 | .34 | 1240 | 7.9 | 24.5 | 30 | 29 | 4.4 | 52 | 1.8 | 310 | 140 |
| JUL 07... | 1445 | .00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| AUG 27... | 1230 | .00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 09... | 1200 | .00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| NOV 08... | 120 | 9.3 | 85 | 2.0 | 12 | 180 | 0 | 350 | 38 | .6 | 6.7 | 710 |
| DEC 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 10... | 88 | 7.0 | 98 | 2.7 | 14 | 180 | 0 | 280 | 41 | .7 | 4.6 | 622 |
| FEB 14... | 120 | 8.6 | 92 | 2.2 | 13 | 170 | 0 | 320 | 50 | .5 | 6.9 | 695 |
| MAR 20... | 170 | 13 | 140 | 2.8 | 10 | 200 | 0 | 550 | 74 | .7 | 1.0 | 1060 |
| APR 17... | -- | -- | -- | -- | 1.6 | 160 | 0 | 330 | 56 | .6 | -- | -- |
| MAY 15... | 100 | 9.2 | 130 | 3.3 | 11 | 190 | 0 | 360 | 46 | .8 | 5.6 | 756 |
| JUN 05... | 110 | 9.7 | 120 | 2.9 | 13 | 210 | 0 | 360 | 55 | .6 | 7.4 | 779 |
| JUL 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| AUG 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

## 08049600 MOUNTAIN CREEK NEAR CEDAR HILL, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) | SOLIDS, VOLA-TILE, SUS-PENDED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | PHENOLS (UG/L) | METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| NOV 08... | 0 | 0 | .07 | .01 | .08 | .06 | .94 | 1.0 | .090 | 14 | 2 | .00 |
| DEC 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 10... | 14 | 13 | .01 | .01 | .02 | .00 | 1.5 | 1.5 | .320 | 11 | 1 | .10 |
| FEB 14... | 29 | 8 | .92 | .06 | .98 | .08 | 1.5 | 1.6 | .150 | 13 | 0 | .00 |
| MAR 20... | 9 | 4 | .00 | .00 | .00 | .08 | 2.1 | 2.2 | .040 | 7.6 | 0 | .10 |
| APR 17... | 51 | 12 | 1.8 | .07 | 1.9 | .10 | 1.2 | 1.3 | .100 | 14 | 1 | .30 |
| MAY 15... | 1420 | 106 | .23 | .03 | .26 | .13 | 2.9 | 3.0 | .040 | 22 | 0 | .10 |
| JUN 05... | 16 | 0 | .15 | .01 | .16 | .08 | .71 | .79 | .100 | 8.7 | 2 | .00 |
| JUL 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| AUG 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | TIME | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| JAN 10... | 1445 | 1 | 50 | <1 | 0 | 0 | 20 |
| MAR 20... | 1130 | 0 | 70 | <1 | 0 | 4 | <10 |

| DATE | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY DIS-SOLVED (UG/L AS HG) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| JAN 10... | 0 | 20 | .0 | 0 | 0 | 5 |
| MAR 20... | 0 | 50 | .0 | 1 | 0 | <3 |

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | TEMPER-ATURE, WATER (DEG C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) |
|---|---|---|---|---|---|
| FEB 19... | 1235 | 5.9 | 8.0 | 25 | .40 |

## 08049700 WALNUT CREEK NEAR MANSFIELD, TX

**LOCATION.**--Lat 32°34'51", long 97°06'06", Tarrant County, Hydrologic Unit 12030102, on right bank at downstream side of bridge on county road, 2.6 mi (4.2 km) northeast of Mansfield, 3.3 mi (5.3 km) downstream from Texas and New Orleans Railroad Co. bridge, and 10.2 mi (16.4 km) upstream from mouth.

**DRAINAGE AREA.**--62.8 $mi^2$ (162.7 $km^2$).

**PERIOD OF RECORD.**--Octbber 1960 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 531.08 ft (161.873 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Records good. During the current year, the city of Mansfield diverted 1,560 acre-ft (1.92 $hm^3$) from the Cedar Creek Reservoir pipeline to Fort Worth for municipal use and discharged 838 acre-ft (1.03 $hm^3$) of sewage effluent into a tributary 2.5 mi (4.0 km) upstream from station. Several observations of water temperature were made during the year. The Dallas Power and Light Co. operates a gage-height telemeter at this station.

**AVERAGE DISCHARGE.**--20 years, 16.1 $ft^3/s$ (0.456 $m^3/s$), 3.48 in/yr (88 mm/yr), 11,660 acre-ft/yr (14.4 $hm^3/yr$).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 9,570 $ft^3/s$ (271 $m^3/s$) May 3, 1979, gage height, 29.7 ft (9.05 m), from floodmark; no flow at times in 1960-74, 1976-80.

**EXTREMES FOR CURRENT YEAR.**--Peak discharges above base of 700 $ft^3/s$ (19.8 $m^3/s$) and maximum (*):

| Date | Time | Discharge ($ft^3/s$) | Discharge ($m^3/s$) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| May 15 | 2230 | *1,160 | 32.9 | 16.22 | 4.944 |
| Sept. 29 | 1330 | 704 | 19.9 | 13.57 | 4.136 |

Minimum discharge, no flow for many days.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .22 | .12 | .26 | .47 | .41 | 1.8 | 1.7 | .62 | .00 | .00 | .00 |
| 2 | .00 | .04 | .09 | .22 | .43 | .33 | 1.5 | 3.2 | .51 | .00 | .00 | .00 |
| 3 | .00 | .00 | .00 | .20 | .42 | .28 | 20 | 3.8 | .47 | .00 | .00 | .00 |
| 4 | .00 | .00 | .00 | .16 | .39 | .28 | 12 | 2.9 | .41 | .00 | .00 | .00 |
| 5 | .00 | .00 | .00 | .13 | .38 | .28 | 5.8 | 1.7 | .41 | .00 | .00 | .00 |
| 6 | .00 | .00 | .01 | .13 | .36 | .28 | 3.7 | 1.1 | .31 | .00 | .00 | .00 |
| 7 | .00 | .00 | .00 | .10 | .35 | .28 | 3.3 | 4.7 | .30 | .00 | .00 | .00 |
| 8 | .00 | .00 | .00 | .11 | 5.4 | .28 | 2.6 | 3.4 | .44 | .00 | .00 | .00 |
| 9 | .00 | .00 | .00 | .10 | 4.2 | .28 | 1.5 | 2.1 | .44 | .00 | .00 | .00 |
| 10 | .00 | .00 | .00 | .09 | 3.2 | .28 | .98 | 1.2 | .32 | .00 | .00 | .00 |
| 11 | .00 | .00 | .00 | .10 | 5.0 | .28 | .83 | 1.0 | .33 | .00 | .00 | .00 |
| 12 | .00 | .00 | .00 | .10 | 2.6 | .45 | 1.2 | 1.3 | .23 | .00 | .00 | .00 |
| 13 | .00 | .00 | .18 | .10 | 1.6 | .44 | 22 | 1.1 | .11 | .00 | .00 | .00 |
| 14 | .00 | .00 | .10 | .11 | 1.1 | .29 | 27 | 1.4 | .07 | .00 | .00 | .00 |
| 15 | 5.4 | .00 | .04 | .11 | .91 | .24 | 8.1 | 428 | .06 | .00 | .00 | .00 |
| 16 | 2.3 | .00 | .00 | .11 | .81 | .24 | 5.8 | 279 | .00 | .00 | .00 | .00 |
| 17 | .08 | .00 | .00 | .11 | .71 | .16 | 4.6 | 21 | .00 | .00 | .00 | .00 |
| 18 | .02 | .00 | .00 | .11 | .68 | .21 | 4.1 | 8.2 | .00 | .00 | .00 | .00 |
| 19 | .00 | .00 | .00 | .12 | .68 | .20 | 3.6 | 5.3 | .00 | .00 | .00 | .00 |
| 20 | .00 | .00 | .00 | .12 | .64 | .15 | 3.4 | 4.1 | .00 | .00 | .00 | .00 |
| 21 | .00 | .00 | .01 | 9.7 | .60 | .12 | 3.2 | 3.8 | .03 | .00 | .00 | .00 |
| 22 | .11 | .00 | .26 | 273 | .56 | .12 | 2.7 | 3.1 | .23 | .00 | .00 | .00 |
| 23 | .05 | .00 | 17 | 18 | .53 | .13 | 2.5 | 2.6 | .05 | .00 | .00 | .00 |
| 24 | .00 | .00 | 18 | 5.0 | .50 | .17 | 4.5 | 2.4 | .00 | .00 | .00 | .00 |
| 25 | .48 | .00 | 4.5 | 1.7 | .47 | .17 | 23 | 2.1 | .00 | .00 | .00 | .00 |
| 26 | .09 | .00 | 2.0 | .98 | .42 | .16 | 8.1 | 1.7 | .00 | .00 | .00 | .00 |
| 27 | .06 | .00 | 1.7 | .69 | .39 | .78 | 4.8 | 1.5 | .00 | .00 | .00 | .00 |
| 28 | .02 | .00 | 1.2 | .57 | .38 | 5.2 | 3.5 | 1.3 | .00 | .00 | .00 | .00 |
| 29 | .00 | .00 | .83 | .69 | .39 | 5.1 | 2.6 | 1.1 | .00 | .00 | .00 | 252 |
| 30 | 26 | .04 | .60 | .65 | --- | 2.7 | 2.1 | .87 | .00 | .00 | .00 | 26 |
| 31 | 1.2 | --- | .44 | .58 | --- | 2.0 | --- | .73 | --- | .00 | .00 | --- |
| TOTAL | 35.81 | .30 | 47.08 | 314.15 | 34.57 | 22.29 | 190.81 | 797.40 | 5.34 | .00 | .00 | 278.00 |
| MEAN | 1.16 | .010 | 1.52 | 10.1 | 1.19 | .72 | 6.36 | 25.7 | .18 | .000 | .000 | 9.27 |
| MAX | 26 | .22 | 18 | 273 | 5.4 | 5.2 | 27 | 428 | .62 | .00 | .00 | 252 |
| MIN | .00 | .00 | .00 | .09 | .35 | .12 | .83 | .73 | .00 | .00 | .00 | .00 |
| CFSM | .02 | .000 | .02 | .16 | .02 | .01 | .10 | .41 | .003 | .000 | .000 | .15 |
| IN. | .02 | .00 | .03 | .19 | .02 | .01 | .11 | .47 | .00 | .00 | .00 | .16 |
| AC-FT | 71 | .6 | 93 | 623 | 69 | 44 | 378 | 1580 | 11 | .00 | .00 | 551 |

CAL YR 1979 TOTAL 7446.71 MEAN 20.4 MAX 2270 MIN .00 CFSM .33 IN 4.41 AC-FT 14770
WTR YR 1980 TOTAL 1725.75 MEAN 4.72 MAX 428 MIN .00 CFSM .08 IN 1.02 AC-FT 3420

## 08049900 MOUNTAIN CREEK NEAR DUNCANVILLE, TX

**LOCATION.**--Lat 32°39'43", long 96°58'56", Dallas County, Hydrologic Unit 12030102, at downstream side of bridge on Farm Road 1382; 2.3 mi (3.7 km) downstream from Walnut Creek, 4.5 mi (7.2 km) west of Duncanville, and 5.5 mi (8.8 km) upstream from Mountain Creek Lake Dam.

**DRAINAGE AREA.**--225 mi² (583 km²).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1970 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

**REMARKS.**--Elevation records good. This station is used to aid in the operation of Mountain Creek Lake. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see Mountain Creek near Cedar Hill (station 08049600). The Dallas Power and Light Co. operates a gage-height telemeter at this station.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum elevation, 469.83 ft (143.204 m) Apr. 19, 1976; channel dry at times June 16 to Sept. 28, 1980.

**EXTREMES FOR CURRENT YEAR.**--Maximum elevation, 463.80 ft (141.366 m) May 16 at 1300 hours; channel dry at times June 16 to Sept. 28.

ELEVATION, IN FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 457.01 | 457.66 | 457.16 | 457.62 | 457.77 | 457.65 | 457.78 | 456.82 | 456.52 | | | --- |
| 2 | 457.00 | 457.52 | 457.22 | 457.59 | 457.73 | 457.60 | 457.74 | 458.90 | 456.46 | | | --- |
| 3 | 456.96 | 457.40 | 457.29 | 457.60 | 457.71 | 457.58 | 458.98 | 457.69 | 456.37 | | | --- |
| 4 | 456.93 | 457.34 | 457.32 | 457.54 | 457.65 | 457.41 | 458.26 | 457.20 | 456.29 | | | --- |
| 5 | 456.90 | 457.27 | 457.32 | 457.49 | 457.62 | 457.56 | 457.93 | 456.94 | 456.25 | | | --- |
| 6 | 456.87 | 457.22 | 457.32 | 457.47 | 457.62 | 457.46 | 457.74 | 457.57 | 456.20 | | | --- |
| 7 | 456.84 | 457.20 | 457.31 | 457.44 | 457.63 | 457.66 | 457.65 | 458.57 | 456.13 | | | --- |
| 8 | 456.81 | 457.17 | 457.34 | 457.42 | 458.32 | 457.63 | 457.39 | 457.66 | 456.11 | | | --- |
| 9 | 456.79 | 457.16 | 457.36 | 457.43 | 459.00 | 457.67 | 457.15 | 457.21 | 456.08 | | | --- |
| 10 | 456.75 | 457.15 | 457.35 | 457.45 | 458.73 | 457.75 | 457.04 | 456.93 | 456.03 | | | --- |
| 11 | 456.70 | 457.16 | 457.34 | 457.36 | 458.89 | 457.90 | 457.07 | 456.75 | 456.01 | | | --- |
| 12 | 456.67 | 457.15 | 457.53 | 457.25 | 458.52 | 457.74 | 457.21 | 456.70 | 455.95 | | | --- |
| 13 | 456.66 | 457.13 | 457.76 | 457.20 | 458.11 | 457.66 | 458.11 | 456.67 | 455.90 | | | --- |
| 14 | 456.64 | 457.10 | 457.73 | 457.11 | 458.02 | 457.75 | 459.41 | 458.67 | 455.87 | | | --- |
| 15 | 456.78 | 457.07 | 457.66 | 457.07 | 457.47 | 457.73 | 458.33 | 461.76 | 455.83 | | | --- |
| 16 | 457.64 | 457.08 | 457.62 | 457.06 | 457.93 | 457.68 | 457.91 | 461.64 | --- | | | --- |
| 17 | 457.58 | 457.09 | 457.59 | 457.22 | 457.80 | 457.66 | 457.67 | 459.80 | --- | | | --- |
| 18 | 457.41 | 457.12 | 457.58 | 457.23 | 457.77 | 457.59 | 457.51 | 459.03 | --- | | | --- |
| 19 | 457.29 | 457.12 | 457.55 | 457.42 | 457.39 | 457.58 | 457.42 | 458.35 | --- | | | --- |
| 20 | 457.24 | 457.14 | 457.54 | 457.46 | 457.71 | 457.56 | 457.22 | 457.87 | --- | | | --- |
| 21 | 457.19 | 457.15 | 457.63 | 459.64 | 457.40 | 457.54 | 457.12 | 457.69 | --- | | | --- |
| 22 | 457.21 | 457.18 | 457.63 | 462.29 | 457.53 | 457.51 | 457.25 | 457.54 | --- | | | --- |
| 23 | 457.17 | 457.20 | 459.81 | 459.84 | 457.68 | 457.54 | 457.28 | 457.44 | --- | | | --- |
| 24 | 457.14 | 457.22 | 459.33 | 459.30 | 457.66 | 457.52 | 457.94 | 457.37 | --- | | | --- |
| 25 | 457.12 | 457.24 | 458.25 | 459.05 | 457.62 | 457.55 | 459.45 | 457.28 | --- | | | --- |
| 26 | 457.08 | 457.22 | 457.92 | 458.44 | 457.59 | 457.57 | 458.22 | 457.09 | --- | | | --- |
| 27 | 457.13 | 457.20 | 457.79 | 458.07 | 457.60 | 457.76 | 457.59 | 456.95 | --- | | | --- |
| 28 | 457.15 | 457.16 | 457.73 | 457.89 | 457.59 | 458.08 | 457.30 | 456.84 | --- | | | --- |
| 29 | 457.12 | 457.14 | 457.67 | 457.81 | 457.67 | 458.23 | 456.86 | 456.78 | --- | | | 460.56 |
| 30 | 458.00 | 457.14 | 457.64 | 457.78 | --- | 458.05 | 456.76 | 456.68 | --- | | | 459.27 |
| 31 | 457.99 | --- | 457.64 | 457.81 | --- | 457.89 | --- | 456.58 | --- | | | --- |
| MAX | 458.00 | 457.66 | 459.81 | 462.29 | 459.00 | 458.23 | 459.45 | 461.76 | --- | | | --- |
| MIN | 456.64 | 457.07 | 457.16 | 457.06 | 457.39 | 457.41 | 456.76 | 456.58 | --- | | | --- |

CAL YR 1979 MAX 468.16 MIN 456.21
WTR YR 1980 MAX - -

NOTE.--Water surface below elevation 455.80 ft June 16 to Sept. 28.

## 08049900 MOUNTAIN CREEK NEAR DUNCANVILLE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: July 1974 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICRO-MHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | COLOR (PLATINUM COBALT UNITS) | TURBIDITY (NTU) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>23... | 1230 | 740 | 7.3 | 19.0 | 35 | 2.6 | 9.0 | 97 | 5.8 | 170 | 0 | 56 |
| NOV<br>08... | 1040 | 405 | 7.4 | 12.0 | 80 | 34 | 2.5 | 23 | 3.7 | 130 | 20 | 43 |
| DEC<br>12... | 1430 | 475 | 7.2 | 9.0 | 30 | 2.8 | 2.9 | 25 | 7.5 | 160 | 6 | 56 |
| JAN<br>16... | 1525 | 842 | 7.8 | 13.0 | 40 | 28 | 9.6 | 91 | 4.2 | 230 | 86 | 82 |
| FEB<br>14... | 1015 | 965 | 7.8 | 6.5 | 30 | 60 | 11.0 | 89 | 3.6 | 320 | 180 | 110 |
| MAR<br>20... | 0945 | 1290 | 8.1 | 13.5 | 20 | 7.6 | 10.8 | 105 | 4.2 | 400 | 210 | 140 |
| APR<br>17... | 1115 | 1100 | 7.7 | 15.0 | 20 | 39 | -- | -- | -- | 350 | 210 | 120 |
| MAY<br>15... | 1050 | 695 | 7.6 | 19.0 | 30 | 640 | 6.0 | 66 | 3.3 | 230 | 100 | 79 |
| JUN<br>05... | 1105 | 1000 | 7.9 | 25.5 | 30 | 34 | 7.7 | 94 | 4.3 | 320 | 140 | 110 |

| DATE | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>23... | 6.5 | 87 | 2.9 | 11 | 250 | 0 | 77 | 59 | .5 | 8.2 | 428 | 3 |
| NOV<br>08... | 4.6 | 28 | 1.1 | 6.9 | 130 | 0 | 69 | 18 | .5 | 5.8 | 240 | 40 |
| DEC<br>12... | 5.4 | 35 | 1.2 | 7.3 | 190 | 0 | 53 | 22 | .4 | 7.3 | 280 | 9 |
| JAN<br>16... | 7.1 | 79 | 2.2 | 14 | 180 | 0 | 210 | 40 | .6 | 7.7 | 529 | 44 |
| FEB<br>14... | 9.9 | 75 | 1.8 | 9.6 | 160 | 0 | 290 | 47 | .5 | 8.0 | 629 | 63 |
| MAR<br>20... | 13 | 120 | 2.6 | 11 | 240 | 0 | 350 | 67 | .6 | 1.2 | 821 | 14 |
| APR<br>17... | 11 | 97 | 2.3 | 11 | 170 | 0 | 310 | 62 | .5 | .0 | 695 | 46 |
| MAY<br>15... | 7.0 | 56 | 1.6 | 6.7 | 150 | 0 | 190 | 24 | .6 | 9.3 | 447 | 1010 |
| JUN<br>05... | 11 | 80 | 1.9 | 11 | 220 | 0 | 250 | 49 | .5 | 9.5 | 629 | 55 |

| DATE | SOLIDS, VOLATILE, SUSPENDED (MG/L) | NITROGEN, NITRATE TOTAL (MG/L AS N) | NITROGEN, NITRITE TOTAL (MG/L AS N) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA TOTAL (MG/L AS N) | NITROGEN, ORGANIC TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | PHENOLS (UG/L) | METHYLENE BLUE ACTIVE SUBSTANCE (MC/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>23... | 2 | .00 | .02 | .02 | 2.3 | 1.7 | 4.0 | 1.800 | 18 | 6 | .20 |
| NOV<br>08... | 11 | .33 | .01 | .34 | 1.2 | 1.2 | 2.4 | .290 | 5.9 | 0 | .00 |
| DEC<br>12... | 5 | .00 | .02 | .01 | .01 | 1.3 | 1.3 | 4.900 | 10 | 3 | .00 |
| JAN<br>16... | 14 | .51 | .12 | .63 | .07 | 1.7 | 1.8 | .220 | 10 | 1 | .10 |
| FEB<br>14... | 15 | 1.0 | .06 | 1.1 | .38 | 1.2 | 1.6 | .230 | 11 | 0 | .00 |
| MAR<br>20... | 8 | .87 | .04 | .91 | .12 | 1.4 | 1.5 | .180 | 12 | 0 | .10 |
| APR<br>17... | 13 | 1.7 | .08 | 1.8 | .29 | 1.2 | 1.5 | .170 | 11 | 2 | .20 |
| MAY<br>15... | 58 | .85 | .07 | .92 | .33 | 1.4 | 1.7 | .110 | 24 | 1 | .00 |
| JUN<br>05... | 13 | .31 | .02 | .33 | .02 | 1.3 | 1.3 | .140 | 11 | 3 | .00 |

## 08049900 MOUNTAIN CREEK NEAR DUNCANVILLE, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, DIS- SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| JAN 16... | 1525 | 2 | 60 | <1 | 0 | 0 | 20 |
| MAR 20... | 0945 | 1 | 80 | <1 | 0 | 1 | <10 |

| DATE | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY DIS- SOLVED (UG/L AS HG) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, DIS- SOLVED (UG/L AS AG) | ZINC, DIS- SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| JAN 16... | 0 | 120 | .0 | 0 | 0 | 5 |
| MAR 20... | 0 | 2 | .0 | 0 | 0 | 3 |

## 08050050 MOUNTAIN CREEK LAKE NEAR GRAND PRAIRIE, TX

**LOCATION.**--Lat 32°43'55", long 96°56'35", Dallas County, Hydrologic Unit 12030102, at right end of spillway in Mountain Creek Dam on Mountain Creek, 2.5 mi (4.0 km) upstream from Texas and Pacific Railway Co. bridge, and 3.7 mi (6.0 km) southeast of Grand Prairie.

**DRAINAGE AREA.**--295 mi² (764 km²).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1960 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 21, 1960, nonrecording gage at powerplant at same datum.

**REMARKS.**--The lake is formed by a rolled earthfill dam 5,800 ft (1,770 m) long, including a controlled spillway six 34- by 27-foot (10 by 8 m) tainter gates. The dam was completed in December 1936 and deliberate impoundment began on Mar. 24, 1937. The lake was built and is operated by Dallas Power and Light Co. to supply cooling water for their generating plant. The capacity curve is based on a survey made in 1963. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08049600. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 467.0 | - |
| Top of gates | 458.0 | 25,720 |
| Top of dry weather conservation pool | 457.0 | 22,840 |
| Top of wet weather conservation pool | 456.0 | 20,260 |
| Crest of spillway (sill of tainter gates) | 431.0 | 0 |

**COOPERATION.**--The capacity curve was furnished by the Dallas Power and Light Co.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 27,440 acre-ft (33.8 hm³) Mar. 27, 1977, elevation, 458.52 ft (139.757 m); minimum, 14,120 acre-ft (17.4 hm³) Oct. 18, 1972, elevation, 453.25 ft (138.151 m).

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 24,860 acre-ft (30.7 hm³) Jan. 23 at 0830 hours, elevation, 457.70 ft (139.507 m); minimum, 14,990 acre-ft (18.5 hm³) Sept. 26, elevation, 453.67 ft (138.279 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 453.0 | 13,600 | 456.0 | 20,260 |
| 454.0 | 15,670 | 457.0 | 22,840 |
| 455.0 | 17,890 | 458.0 | 25,720 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 21470 | 21110 | 20540 | 22660 | 22710 | 21600 | 21890 | 22960 | 22690 | 20850 | 18510 | 16420 |
| 2 | 21450 | 21090 | 20520 | 22690 | 22760 | 21780 | 21960 | 22140 | 22630 | 20780 | 18390 | 16360 |
| 3 | 21340 | 21090 | 20540 | 22660 | 22760 | 21860 | 21960 | 22270 | 22560 | 20670 | 18410 | 16290 |
| 4 | 21290 | 21090 | 20520 | 22630 | 22790 | 21630 | 22070 | 22350 | 22500 | 20600 | 18150 | 16230 |
| 5 | 21270 | 20960 | 20390 | 22660 | 22790 | 21700 | 22140 | 22380 | 22450 | 20490 | 18100 | 16160 |
| 6 | 21190 | 20980 | 20490 | 22500 | 22760 | 21760 | 22200 | 22580 | 22380 | 20410 | 18030 | 16070 |
| 7 | 21210 | 20980 | 20470 | 22580 | 22790 | 21810 | 22090 | 22690 | 22320 | 20310 | 17940 | 16070 |
| 8 | 21140 | 21110 | 20410 | 22580 | 22170 | 21730 | 22040 | 22200 | 22220 | 20240 | 17890 | 16050 |
| 9 | 20930 | 20980 | 20470 | 22560 | 22560 | 21730 | 22040 | 22270 | 22200 | 20190 | 17820 | 16050 |
| 10 | 20960 | 20960 | 20540 | 22610 | 22790 | 21700 | 21990 | 22320 | 22140 | 20090 | 17760 | 16030 |
| 11 | 20880 | 20960 | 20410 | 22530 | 21370 | 21680 | 21780 | 22270 | 22090 | 20020 | 17710 | 15980 |
| 12 | 20780 | 20930 | 20800 | 22530 | 21550 | 21600 | 21890 | 22300 | 22040 | 19950 | 17780 | 15940 |
| 13 | 20720 | 20850 | 20880 | 22530 | 21700 | 21650 | 22500 | 22270 | 21940 | 19860 | 17730 | 15800 |
| 14 | 20670 | 20850 | 20880 | 22530 | 21810 | 21630 | 22740 | 22400 | 21860 | 19810 | 17650 | 15780 |
| 15 | 20910 | 20830 | 20880 | 22560 | 21730 | 21700 | 22900 | 22500 | 21780 | 19710 | 17580 | 15740 |
| 16 | 20930 | 20830 | 20750 | 22530 | 21810 | 21700 | 23040 | 23960 | 21650 | 19600 | 17530 | 15670 |
| 17 | 20960 | 20830 | 20800 | 22530 | 21860 | 21550 | 22960 | 22400 | 21580 | 19530 | 17400 | 15590 |
| 18 | 20960 | 20880 | 20800 | 22530 | 21940 | 21520 | 22960 | 22760 | 21550 | 19430 | 17310 | 15530 |
| 19 | 21010 | 20880 | 20830 | 22530 | 21910 | 21520 | 22960 | 22870 | 21500 | 19360 | 17250 | 15480 |
| 20 | 20960 | 20960 | 20830 | 22580 | 21960 | 21500 | 22960 | 22960 | 21550 | 19290 | 17180 | 15400 |
| 21 | 20880 | 20850 | 20960 | 23160 | 21940 | 21450 | 22960 | 22980 | 21500 | 19290 | 17090 | 15360 |
| 22 | 20830 | 20850 | 21060 | 23530 | 21940 | 21450 | 22900 | 22980 | 21520 | 19190 | 17020 | 15260 |
| 23 | 20800 | 20800 | 21890 | 22840 | 21910 | 21500 | 22900 | 22980 | 21520 | 19100 | 16960 | 15150 |
| 24 | 20780 | 20780 | 22300 | 23360 | 21890 | 21370 | 22840 | 23040 | 21470 | 19030 | 16890 | 15110 |
| 25 | 20750 | 20750 | 22580 | 23440 | 21860 | 21400 | 22660 | 23010 | 21400 | 19000 | 16940 | 15090 |
| 26 | 20720 | 20880 | 22610 | 23530 | 21890 | 21400 | 22810 | 22980 | 21370 | 18930 | 16890 | 15170 |
| 27 | 20670 | 20670 | 22630 | 23590 | 21940 | 21680 | 22870 | 22930 | 21270 | 18890 | 16780 | 15300 |
| 28 | 20650 | 20650 | 22660 | 23650 | 21890 | 21830 | 22870 | 22930 | 21190 | 18960 | 16710 | 15360 |
| 29 | 20600 | 20570 | 22690 | 23760 | 21760 | 21910 | 22930 | 22960 | 21060 | 18890 | 16670 | 18170 |
| 30 | 21110 | 20570 | 22660 | 22630 | --- | 21860 | 22870 | 22840 | 20960 | 18860 | 16620 | 18860 |
| 31 | 21140 | --- | 22660 | 22690 | --- | 21910 | --- | 22790 | --- | 18580 | 16510 | --- |
| MAX | 21470 | 21110 | 22690 | 23760 | 22790 | 21910 | 23040 | 23960 | 22690 | 20850 | 18510 | 18860 |
| MIN | 20600 | 20570 | 20390 | 22500 | 21370 | 21370 | 21780 | 22140 | 20960 | 18580 | 16510 | 15090 |
| (†) | 456.34 | 456.12 | 456.93 | 456.94 | 456.58 | 456.64 | 457.01 | 456.98 | 456.27 | 455.29 | 454.38 | 455.41 |
| (‡) | -410 | -570 | +2090 | +30 | -930 | +150 | +960 | -80 | -1830 | -2380 | -2070 | +2350 |

CAL YR 1979 MAX 23960 MIN 16360 †† +6300
WTR YR 1980 MAX 23960 MIN 15090 †† -2690

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

## 08050050 MOUNTAIN CREEK LAKE NEAR GRAND PRAIRIE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) | TEMPER- ATURE, WATER (DEG C) | HARD- NESS (MG/L AS CACO3) | HARD- NESS, NONCAR- BONATE (MG/L CACO3) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | SODIUM AD- SORP- TION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| MAR | | | | | | | | | |
| 10... | 1710 | 536 | 16.5 | 160 | 55 | 56 | 5.2 | 40 | 1.4 |

| DATE | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | BICAR- BONATE (MG/L AS HCO3) | CAR- BONATE (MG/L AS CO3) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| MAR | | | | | | | | |
| 10... | 7.1 | 130 | 0 | 120 | 21 | .5 | 2.5 | 316 |

## 08050100 MOUNTAIN CREEK AT GRAND PRAIRIE, TX

LOCATION.--Lat 32°44'52", long 96°55'33", Dallas County, Hydrologic Unit 12030102, on right bank at downstream side of downstream bridge on Jefferson Street, 1,000 ft (305 m) upstream from bridge on U.S. Highway 80, 1.2 mi (1.9 km) upstream from Texas and Pacific Railroad Co. bridge, 1.5 mi (2.4 km) downstream from Mountain Creek Lake Dam, and 4.4 mi (7.1 km) east of Grand Prairie.

DRAINAGE AREA.--298 $mi^2$ (772 $km^2$).

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 407.31 ft (124.148 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Mountain Creek Lake (station 08050050). Dallas Power and Light Co. gage-height telemeter is located at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--20 years, 102 $ft^3/s$ (2.889 $m^3/s$), 73,900 acre-ft/yr (91.1 $hm^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,100 $ft^3/s$ (1,080 $m^3/s$) Apr. 19, 1976, gage height, 24.21 ft (7.379 m); maximum gage height, 24.62 ft (7.504 m) May 7, 1969; no flow in 1964, 1972-74.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,040 $ft^3/s$ (114 $m^3/s$) May 2 at 1700 hours, gage height, 11.52 ft (3.511 m); no flow June 17, 18, result of pumpage from pool at gage.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .68 | 1.0 | .87 | .64 | 1.1 | .45 | .77 | .93 | 1.6 | .37 | .65 | .64 |
| 2 | .67 | .99 | .69 | .61 | .87 | .61 | .77 | 760 | 1.3 | .35 | .62 | .64 |
| 3 | .65 | .97 | .66 | .56 | .74 | .72 | .77 | 3.1 | .77 | .39 | .59 | .69 |
| 4 | .66 | .92 | .64 | .61 | .69 | .77 | .77 | 1.6 | .43 | .46 | .58 | .69 |
| 5 | .73 | .88 | .61 | .66 | .71 | .54 | .80 | 1.3 | .41 | .47 | .58 | .72 |
| 6 | .71 | .94 | .54 | 1.6 | .61 | .52 | .90 | 1.3 | .43 | .45 | .56 | .69 |
| 7 | .71 | 1.1 | .58 | .84 | .64 | .49 | 1.0 | 1.7 | .54 | .39 | .57 | .84 |
| 8 | .70 | .97 | .58 | .66 | 518 | .43 | .93 | 437 | .45 | .38 | .55 | .97 |
| 9 | .67 | 1.0 | .58 | .64 | 2.3 | .45 | .90 | 2.3 | .41 | .37 | .58 | .97 |
| 10 | .76 | 1.0 | .61 | .61 | 1.7 | .45 | .90 | 1.5 | .43 | .37 | .59 | .87 |
| 11 | .77 | 1.2 | .61 | .69 | 778 | .47 | .96 | 1.3 | .35 | .38 | .61 | .80 |
| 12 | .66 | 1.1 | 1.5 | .58 | 1.7 | .49 | 1.0 | 1.2 | .33 | .37 | .54 | .74 |
| 13 | .57 | 1.0 | 1.1 | .54 | 1.1 | .47 | 3.9 | 1.2 | .32 | .37 | .52 | .69 |
| 14 | .62 | 1.0 | .74 | .58 | 1.1 | .49 | 1.9 | 47 | .35 | .38 | .49 | .64 |
| 15 | .78 | 1.0 | .72 | .58 | .69 | .56 | 1.1 | 1100 | .47 | .38 | .45 | .69 |
| 16 | .97 | .93 | .66 | .58 | .69 | .72 | .96 | 2050 | .32 | .37 | .47 | .66 |
| 17 | .72 | .90 | .77 | .54 | .74 | .66 | 1.0 | 1680 | .19 | .38 | .49 | .66 |
| 18 | .68 | .87 | .77 | .56 | .66 | .69 | .91 | 2.5 | .20 | .38 | .52 | .69 |
| 19 | .67 | .84 | .66 | .61 | .61 | .72 | .94 | 1.5 | .36 | .39 | .49 | .72 |
| 20 | .69 | .80 | .64 | .69 | .54 | .77 | .86 | 1.3 | .60 | .42 | .49 | .75 |
| 21 | .81 | .80 | .72 | 2.3 | .47 | .87 | .82 | 1.2 | .62 | 1.1 | .49 | .75 |
| 22 | .91 | .87 | 1.1 | 835 | .45 | .77 | .82 | 1.1 | .60 | 1.6 | .59 | .59 |
| 23 | .88 | 1.0 | .51 | 1560 | .43 | .80 | .82 | 1.0 | .56 | 1.4 | .54 | .49 |
| 24 | .88 | .93 | 1.0 | 3.1 | .45 | .84 | 140 | .87 | .47 | .79 | .52 | .40 |
| 25 | .83 | .93 | .72 | 1.6 | .45 | .87 | 336 | .87 | .45 | .73 | .54 | .27 |
| 26 | .81 | .90 | .64 | 1.4 | .47 | .87 | 1.3 | .77 | .42 | .69 | .61 | .27 |
| 27 | .82 | .96 | .58 | 1.5 | .47 | .96 | 1.2 | .69 | .41 | .80 | .66 | .66 |
| 28 | .80 | .93 | .56 | 1.5 | .45 | 1.9 | 1.0 | .77 | .38 | .94 | .72 | .89 |
| 29 | .83 | 1.0 | .69 | 1.8 | .43 | 1.1 | .93 | .69 | .48 | .79 | .80 | 22 |
| 30 | 2.7 | 1.1 | .69 | 493 | --- | .90 | .94 | .80 | .40 | .73 | .77 | 3.4 |
| 31 | 1.1 | --- | .64 | 1.8 | --- | .80 | --- | .80 | --- | .67 | .74 | --- |
| TOTAL | 25.44 | 28.83 | 22.38 | 2916.38 | 1317.26 | 22.15 | 505.87 | 6106.29 | 15.05 | 18.06 | 17.92 | 44.48 |
| MEAN | .82 | .96 | .72 | 94.1 | 45.4 | .71 | 16.9 | 197 | .50 | .58 | .58 | 1.48 |
| MAX | 2.7 | 1.2 | 1.5 | 1560 | 778 | 1.9 | 336 | 2050 | 1.6 | 1.6 | .80 | 22 |
| MIN | .57 | .80 | .51 | .54 | .43 | .43 | .77 | .69 | .19 | .35 | .45 | .27 |
| AC-FT | 50 | 57 | 44 | 5780 | 2610 | 44 | 1000 | 12110 | 30 | 36 | 36 | 88 |

CAL YR 1979 TOTAL 46153.34 MEAN 126 MAX 14200 MIN .32 AC-FT 91550
WTR YR 1980 TOTAL 11040.11 MEAN 30.2 MAX 2050 MIN .19 AC-FT 21900

## 08050500 ELM FORK TRINITY RIVER NEAR SANGER, TX

**LOCATION.**--Lat 33°23'11", long 97°05'05", Denton County, Hydrologic Unit 12030103, on right bank on downstream side of pier of bridge on Farm Road 455, 4.1 mi (6.6 km) downstream from Spring Creek, 5.0 mi (8.0 km) upstream from Isle du Bois Creek, and 5.4 mi (8.7 km) northeast of Sanger.

**DRAINAGE AREA.**--381 mi² (987 km²).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--April 1949 to current year.

**REVISED RECORDS.**--WSP 1922: Drainage area.

**GAGE.**--Water-stage recorder. Datum of gage is 553.72 ft (168.774 m) National Geodetic Vertical Datum of 1929. Prior to May 7, 1955, at site 500 ft (150 m) downstream at same datum.

**REMARKS.**--Water-discharge records good. Flow is affected at times by discharge from the flood-detention pools of 41 floodwater-retarding structures with a combined capacity of 26,790 acre-ft (33.0 hm³). These structures control runoff from 94.7 mi² (245.3 km²) in the Elm Fork Trinity River watershed. Records furnished by the city of Gainesville show that 3,080 acre-ft (3.80 hm³) of sewage effluent was discharged into the river above this station.

**AVERAGE DISCHARGE.**--31 years, 141 ft³/s (3.993 m³/s), 102,200 acre-ft/yr (126 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 50,000 ft³/s (1,420 m³/s) Oct. 31, 1974, gage height, 29.10 ft (8.870 m); no flow at times.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since at least 1903, 30.7 ft (9.36 m) in May 1908, from information by local residents. Flood of May 18, 1935, reached a stage of 29.7 ft (9.05 m), from floodmarks.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 11,000 ft³/s (312 m³/s), Sept. 29 at 0330 hours, gage height, 25.99 ft (7.922 m), no other peak above base of 4,000 ft³/s (113 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.2 | 12 | 4.0 | 6.8 | 7.7 | 4.7 | 5.0 | 3.5 | 1.6 | .98 | .18 | .00 |
| 2 | 2.7 | 7.1 | 3.5 | 6.1 | 7.2 | 5.0 | 5.8 | 3.8 | 1.6 | .74 | .11 | .00 |
| 3 | 2.1 | 5.5 | 3.3 | 5.6 | 6.3 | 4.6 | 5.9 | 3.3 | 1.5 | .56 | .08 | .00 |
| 4 | 2.0 | 5.4 | 3.8 | 5.0 | 6.7 | 4.7 | 6.1 | 3.5 | 1.3 | .45 | .05 | .00 |
| 5 | 2.2 | 4.8 | 4.0 | 4.6 | 6.2 | 5.1 | 5.1 | 3.5 | 1.3 | .39 | .01 | .00 |
| 6 | 2.2 | 5.5 | 3.8 | 4.4 | 6.4 | 5.5 | 4.9 | 3.8 | 1.2 | .32 | .00 | .00 |
| 7 | 2.6 | 5.4 | 3.3 | 4.3 | 6.3 | 6.1 | 4.8 | 4.0 | 1.2 | .55 | .00 | .00 |
| 8 | 3.2 | 5.2 | 3.5 | 4.3 | 30 | 6.9 | 4.3 | 7.7 | 1.3 | .42 | .00 | .00 |
| 9 | 4.7 | 13 | 4.3 | 4.3 | 100 | 6.6 | 4.4 | 6.0 | 1.7 | .32 | .00 | .00 |
| 10 | 4.7 | 27 | 4.5 | 4.3 | 34 | 6.7 | 4.7 | 5.1 | 1.3 | .24 | .00 | .00 |
| 11 | 3.9 | 11 | 4.3 | 4.3 | 21 | 6.4 | 3.8 | 4.8 | .94 | .53 | .00 | .00 |
| 12 | 4.7 | 6.6 | 60 | 4.5 | 26 | 6.9 | 3.8 | 4.4 | .80 | .46 | .00 | .00 |
| 13 | 5.4 | 4.6 | 37 | 4.8 | 32 | 7.5 | 11 | 4.5 | .93 | .34 | .00 | .00 |
| 14 | 5.1 | 3.4 | 22 | 4.8 | 20 | 8.3 | 14 | 3.5 | 1.0 | .31 | .00 | .00 |
| 15 | 8.4 | 4.3 | 13 | 4.8 | 15 | 6.4 | 8.4 | 4.0 | 1.0 | .27 | .00 | .00 |
| 16 | 9.1 | 5.2 | 8.5 | 4.8 | 12 | 7.2 | 7.4 | 7.9 | 1.0 | .29 | .00 | .00 |
| 17 | 12 | 4.5 | 6.3 | 5.1 | 8.3 | 7.3 | 6.3 | 12 | 1.0 | .34 | .00 | .00 |
| 18 | 7.4 | 4.0 | 5.7 | 5.1 | 7.3 | 6.1 | 5.1 | 5.3 | 1.0 | .28 | .00 | .00 |
| 19 | 6.2 | 3.5 | 5.4 | 5.1 | 6.8 | 6.0 | 4.3 | 3.8 | 1.1 | .20 | .00 | .00 |
| 20 | 6.1 | 3.8 | 5.1 | 5.2 | 7.2 | 6.1 | 3.8 | 3.2 | 204 | .16 | .00 | .00 |
| 21 | 6.4 | 11 | 4.9 | 6.9 | 6.1 | 6.2 | 3.5 | 3.5 | 48 | .14 | .00 | .00 |
| 22 | 6.6 | 5.7 | 4.8 | 21 | 5.6 | 5.7 | 3.3 | 12 | 15 | .04 | .00 | .08 |
| 23 | 16 | 3.5 | 11 | 13 | 5.1 | 5.9 | 3.3 | 7.3 | 7.9 | .00 | .00 | .10 |
| 24 | 7.4 | 3.8 | 50 | 12 | 4.8 | 6.7 | 3.3 | 3.7 | 6.2 | .00 | .00 | .10 |
| 25 | 4.5 | 4.5 | 37 | 9.5 | 4.7 | 5.6 | 4.0 | 3.0 | 5.5 | .00 | .00 | 1.4 |
| 26 | 4.5 | 4.8 | 24 | 8.0 | 4.5 | 5.1 | 5.1 | 2.7 | 4.8 | .01 | .00 | 4.3 |
| 27 | 4.7 | 4.5 | 16 | 6.9 | 4.3 | 5.9 | 8.8 | 2.3 | 4.4 | 2.8 | .00 | 22 |
| 28 | 4.2 | 3.8 | 12 | 6.3 | 4.6 | 8.9 | 5.4 | 1.9 | 2.4 | 1.3 | .00 | 2320 |
| 29 | 4.0 | 3.5 | 10 | 6.3 | 4.8 | 14 | 3.5 | 1.8 | 2.0 | .81 | .00 | 5520 |
| 30 | 8.2 | 3.8 | 9.5 | 6.7 | --- | 7.9 | 3.5 | 1.6 | 1.5 | .80 | .00 | 663 |
| 31 | 21 | --- | 8.0 | 7.0 | --- | 5.8 | --- | 1.6 | --- | .28 | .00 | --- |
| TOTAL | 185.4 | 190.7 | 392.5 | 201.8 | 410.9 | 201.8 | 162.6 | 139.0 | 324.47 | 14.33 | .43 | 8530.98 |
| MEAN | 5.98 | 6.36 | 12.7 | 6.51 | 14.2 | 6.51 | 5.42 | 4.48 | 10.8 | .46 | .014 | 284 |
| MAX | 21 | 27 | 60 | 21 | 100 | 14 | 14 | 12 | 204 | 2.8 | .18 | 5520 |
| MIN | 2.0 | 3.4 | 3.3 | 4.3 | 4.3 | 4.6 | 3.3 | 1.6 | .80 | .00 | .00 | .00 |
| AC-FT | 368 | 378 | 779 | 400 | 815 | 400 | 323 | 276 | 644 | 28 | .9 | 16920 |

CAL YR 1979 TOTAL 53959.40 MEAN 148 MAX 4870 MIN 2.0 AC-FT 107000
WTR YR 1980 TOTAL 10754.91 MEAN 29.4 MAX 5520 MIN .00 AC-FT 21330

## 08050500 ELM FORK TRINITY RIVER NEAR SANGER, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1969 to current year. Sediment records: January 1966 to September 1976.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH (UNITS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 07... | 0930 | 5.4 | 843 | 8.0 | 10.0 | 40 | 13 | 8.5 | 75 | 1.7 | 140 | 0 |
| JAN 15... | 1620 | 5.4 | 785 | 8.1 | 11.0 | 20 | 6.4 | 9.0 | 83 | 2.0 | 170 | 0 |
| MAR 18... | 1520 | 5.4 | 995 | 8.9 | 13.5 | 30 | 13 | 13.6 | 131 | 11 | 220 | 0 |
| MAY 21... | 0915 | 4.0 | 920 | 8.1 | 20.0 | 30 | 29 | 4.4 | 49 | 4.0 | 160 | 0 |
| JUL 23... | 0930 | .00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 09... | 1020 | .00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 07... | 48 | 4.4 | 140 | 5.2 | 8.2 | 430 | 0 | 48 | 35 | .3 | 14 |
| JAN 15... | 61 | 5.2 | 110 | 3.6 | 5.4 | 360 | 0 | 51 | 40 | .2 | 1.7 |
| MAR 18... | 78 | 6.9 | 140 | 4.1 | 5.6 | 390 | 33 | 60 | 73 | .3 | 1.7 |
| MAY 21... | 55 | 5.5 | 140 | 4.8 | 6.7 | 420 | 0 | 45 | 60 | .2 | 15 |
| JUL 23... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) | SOLIDS, VOLA-TILE, SUS-PENDED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 07... | 510 | 29 | 15 | 1.5 | .06 | 1.6 | .05 | 1.2 | 1.2 | 3.400 | 11 |
| JAN 15... | 452 | 17 | 8 | 1.3 | .06 | 1.4 | .02 | 1.4 | 1.4 | 1.500 | 6.0 |
| MAR 18... | 591 | 21 | 12 | .08 | .03 | .11 | .12 | 2.2 | 2.3 | 1.500 | 19 |
| MAY 21... | 534 | 58 | 44 | .52 | .10 | .62 | .38 | 1.1 | 1.5 | 2.600 | 14 |
| JUL 23... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

| DATE | TIME | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| JAN 15... | 1620 | 4 | 50 | <1 | 0 | 0 | 20 |
| MAR 18... | 1520 | 6 | 50 | <1 | 0 | 1 | <10 |

| DATE | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY DIS-SOLVED (UG/L AS HG) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| JAN 15... | 0 | 20 | .0 | 0 | 0 | 6 |
| MAR 18... | 0 | 3 | .0 | 1 | 0 | 4 |

## 08051000 ISLE DU BOIS CREEK NEAR PILOT POINT, TX

LOCATION.--Lat 33°24'23", long 97°00'45", Denton County, Hydrologic Unit 12030103, on left bank at downstream side of bridge on Farm Road 372, 2.4 mi (3.9 km) downstream from Wolf Creek, 3.0 mi (4.8 km) west of Pilot Point, and 6.3 mi (10.1 km) upstream from mouth.

DRAINAGE AREA.--266 mi² (689 km²).

PERIOD OF RECORD.--April 1949 to current year.
Water-quality records: Chemical analyses: November 1961 to April 1963. Sediment records: February 1966 to September 1975.

REVISED RECORDS.--WSP 1512: 1950. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 555.48 ft (169.310 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Feb. 8, 1958, water-stage recorder at site 1.0 mi (1.6 km) upstream at datum 4.22 ft (1.286 m) higher.

REMARKS.--Records good. No known diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--31 years (water years 1950-80), 112 ft³/s (3.172 m³/s), 5.72 in/yr (145 mm/yr), 81,140 acre-ft/yr (100 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft³/s (1,130 m³/s) Oct. 31, 1974, gage height, 29.43 ft (8.970 m), present site and datum; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 30.4 ft (9.27 m) in May 1908, present site and datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,700 ft³/s (303 m³/s) Sept. 29 at 1300 hours, gage height, 25.96 ft (7.913 m), no other peak above base of 2,500 ft³/s (70.8 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .41 | .31 | .05 | .00 | .00 | .33 | .23 | .00 | .00 | .00 | .00 |
| 2 | .00 | .07 | .37 | .12 | .00 | .00 | .26 | .13 | .00 | .00 | .00 | .00 |
| 3 | .00 | .02 | .45 | .12 | .00 | .00 | .22 | .09 | .00 | .00 | .00 | .00 |
| 4 | .00 | .00 | .54 | .35 | .02 | .00 | .14 | .03 | .00 | .00 | .00 | .00 |
| 5 | .00 | .00 | .58 | .66 | .07 | .41 | .14 | .00 | .00 | .00 | .00 | .00 |
| 6 | .00 | .00 | .56 | .27 | .04 | .40 | .23 | .00 | .00 | .00 | .00 | .00 |
| 7 | .00 | .00 | .55 | .29 | .06 | .20 | .22 | .00 | .00 | .00 | .00 | .00 |
| 8 | .00 | .00 | .50 | .35 | 18 | .17 | .10 | .00 | .00 | .00 | .00 | .00 |
| 9 | .00 | .00 | .49 | .25 | 81 | .34 | .00 | .00 | .00 | .00 | .00 | .00 |
| 10 | .00 | .00 | .57 | .24 | 118 | .43 | .00 | .00 | .00 | .00 | .00 | .00 |
| 11 | .00 | .00 | .70 | .12 | 31 | .40 | .00 | .00 | .00 | .00 | .00 | .00 |
| 12 | .00 | .00 | 1.2 | .00 | 32 | .84 | .06 | .01 | .00 | .00 | .00 | .00 |
| 13 | .00 | .00 | 1.0 | .00 | 107 | 1.1 | 1.3 | .14 | .00 | .00 | .00 | .00 |
| 14 | .00 | .01 | .17 | .00 | 124 | 1.2 | 1.6 | 10 | .00 | .00 | .00 | .00 |
| 15 | .00 | .03 | .05 | .00 | 40 | .92 | 1.9 | 6.6 | .00 | .00 | .00 | .00 |
| 16 | .00 | .02 | .03 | .00 | 17 | .89 | 1.7 | 2.9 | .00 | .00 | .00 | .00 |
| 17 | .00 | .02 | .02 | .00 | 9.3 | .73 | 1.3 | 39 | .00 | .00 | .00 | .00 |
| 18 | .00 | .07 | .03 | .00 | 5.3 | .89 | .66 | 8.7 | .00 | .00 | .00 | .00 |
| 19 | .00 | .19 | .03 | .00 | 3.0 | .53 | .53 | 3.4 | .00 | .00 | .00 | .00 |
| 20 | .00 | .30 | .04 | .00 | 1.9 | .65 | .64 | 1.0 | .00 | .00 | .00 | .00 |
| 21 | .00 | .61 | .11 | .12 | 1.2 | .68 | .68 | .73 | 71 | .00 | .00 | .00 |
| 22 | .00 | .62 | .23 | 1.0 | .80 | .73 | .63 | .09 | 26 | .00 | .00 | .00 |
| 23 | .00 | .61 | .63 | 1.4 | .23 | 1.2 | 1.0 | .00 | 4.8 | .00 | .00 | .00 |
| 24 | .00 | .51 | 1.3 | .31 | .00 | 1.4 | 1.2 | .00 | 1.1 | .00 | .00 | .00 |
| 25 | .00 | .17 | .23 | .05 | .00 | 1.3 | 1.2 | .00 | .16 | .00 | .00 | .00 |
| 26 | .00 | .14 | .17 | .03 | .00 | 1.4 | 4.8 | .00 | .00 | .00 | .00 | .00 |
| 27 | .00 | .38 | .20 | .00 | .00 | 1.7 | 3.2 | .00 | .00 | .00 | .00 | .00 |
| 28 | .00 | .51 | .35 | .00 | .00 | 4.0 | 1.3 | .00 | .00 | .00 | .00 | 733 |
| 29 | .00 | .39 | .28 | .00 | .00 | 2.0 | .49 | .00 | .00 | .00 | .00 | 6770 |
| 30 | .00 | .34 | .11 | .00 | --- | 1.6 | .28 | .00 | .00 | .00 | .00 | 2600 |
| 31 | .48 | --- | .09 | .00 | --- | .65 | --- | .00 | --- | .00 | .00 | --- |
| TOTAL | .48 | 5.42 | 11.89 | 5.73 | 589.92 | 26.76 | 26.11 | 73.05 | 103.06 | .00 | .00 | 10103.00 |
| MEAN | .015 | .18 | .38 | .18 | 20.3 | .86 | .87 | 2.36 | 3.44 | .000 | .000 | 337 |
| MAX | .48 | .62 | 1.3 | 1.4 | 124 | 4.0 | 4.8 | 39 | 71 | .00 | .00 | 6770 |
| MIN | .00 | .00 | .02 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| CFSM | .000 | .001 | .001 | .001 | .08 | .003 | .003 | .009 | .01 | .000 | .000 | 1.27 |
| IN. | .00 | .00 | .00 | .00 | .08 | .00 | .00 | .01 | .01 | .00 | .00 | 1.41 |
| AC-FT | 1.0 | 11 | 24 | 11 | 1170 | 53 | 52 | 145 | 204 | .00 | .00 | 20040 |

CAL YR 1979 TOTAL 37730.80 MEAN 103 MAX 5700 MIN .00 CFSM .39 IN 5.28 AC-FT 74840
WTR YR 1980 TOTAL 10945.42 MEAN 29.9 MAX 6770 MIN .00 CFSM .11 IN 1.53 AC-FT 21710

## 08051500 CLEAR CREEK NEAR SANGER, TX

**LOCATION.**--Lat 33°20'21", long 97°10'51", Denton County, Hydrologic Unit 12030103, at the downstream side of left abutment of main channel bridge on Interstate Highway 35, 600 ft (180 m) downstream from Duck Creek, 1.3 mi (2.1 km) upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, and 1.7 mi (2.7 km) south of Sanger.

**DRAINAGE AREA.**--295 mi² (764 km²).
Water-quality records: Specific conductance, water temperature, and sediment records: May 1968 to September 1976.

**PERIOD OF RECORD.**--March 1949 to current year.

**REVISED RECORDS.**--WSP 1512: 1950, 1955. WSP 1922: Drainage area.

**GAGE.**--Water-stage recorder and crest-stage gage. Datum of gage is 582.23 ft (177.464 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Apr. 18, 1975, water-stage recorder at site 950 ft (290 m) downstream at datum 5.00 ft (1.524 m) higher.

**REMARKS.**--Records good. No appreciable diversion above station. Flow is affected at times by discharge from the flood-detention pools of 51 floodwater-retarding structures with a combined detention capacity of 38,850 acre-ft (47.9 hm³). These structures control runoff from 149 mi² (386 km²) in the Clear Creek watershed. Several observations of water temperature were made during the year. A crest-stage gage was installed on May 7, 1979.

**AVERAGE DISCHARGE.**--31 years (water years 1950-80), 74.3 ft³/s (2.104 m³/s), 53,830 acre-ft/yr (66.4 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 18,200 ft³/s (515 m³/s) Sept. 13, 1950, gage height, 24.80 ft (7.559 m), site and datum then in use; no flow at times most years.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since at least 1880, 31.5 ft (9.60 m) in May 1908, from information by Gulf, Colorado, and Santa Fe Railway Co. Flood in May 1935 reached a stage of 29.0 ft (8.84 m), from information by State Department of Highways and Public Transportation. Both peaks referenced to site and datum used prior to Apr. 18, 1975.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 984 ft³/s (27.9 m³/s) Sept. 29 at 0245 hours, gage height, 22.58 ft (3.834 m), no peak above base of 3,000 ft³/s (85.0 m³/s); no flow for many days.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .05 | .00 | 6.3 | 4.1 | 3.0 | 5.2 | 2.5 | .23 | .00 | .00 | .00 |
| 2 | .00 | .02 | .00 | 5.0 | 3.8 | 2.7 | 4.9 | 2.5 | .16 | .00 | .00 | .00 |
| 3 | .00 | .00 | .00 | 4.2 | 4.4 | 2.6 | 4.8 | 10 | .12 | .00 | .00 | .00 |
| 4 | .00 | .00 | .70 | 3.6 | 4.4 | 3.2 | 6.1 | 9.7 | .08 | .00 | .00 | .00 |
| 5 | .00 | .00 | 1.5 | 3.5 | 3.9 | 3.5 | 7.6 | 4.6 | .02 | .00 | .00 | .00 |
| 6 | .00 | .00 | 1.9 | 3.5 | 3.6 | 3.5 | 5.7 | 2.7 | .00 | .00 | .00 | .00 |
| 7 | .00 | .00 | 3.2 | 3.2 | 3.2 | 3.5 | 5.7 | 1.9 | .00 | .00 | .00 | .00 |
| 8 | .00 | .00 | 2.7 | 3.2 | 15 | 3.5 | 5.4 | 7.5 | .00 | .00 | .00 | .00 |
| 9 | .00 | .00 | 2.1 | 3.2 | 18 | 3.5 | 4.7 | 5.9 | .00 | .00 | .00 | .00 |
| 10 | .00 | .00 | 2.1 | 3.2 | 19 | 3.5 | 4.4 | 4.0 | .00 | .00 | .00 | .00 |
| 11 | .00 | .00 | 2.2 | 3.2 | 14 | 3.2 | 4.1 | 2.4 | .00 | .00 | .00 | .00 |
| 12 | .00 | .00 | 6.8 | 3.2 | 13 | 3.4 | 3.7 | 1.8 | .00 | .00 | .00 | .00 |
| 13 | .00 | .00 | 6.2 | 3.2 | 9.8 | 3.5 | 6.0 | 1.4 | .00 | .00 | .00 | .00 |
| 14 | .00 | .00 | 4.7 | 3.2 | 8.1 | 4.0 | 11 | 1.4 | .00 | .00 | .00 | .00 |
| 15 | .00 | .00 | 4.3 | 3.3 | 6.7 | 3.8 | 11 | 1.5 | .00 | .00 | .00 | .00 |
| 16 | .00 | .00 | 3.3 | 3.6 | 4.8 | 3.8 | 8.8 | 1.5 | .00 | .00 | .00 | .00 |
| 17 | .00 | .00 | 2.5 | 3.8 | 4.8 | 3.8 | 6.1 | 12 | .00 | .00 | .00 | .00 |
| 18 | .00 | .00 | 2.0 | 3.8 | 4.2 | 3.8 | 4.5 | 5.7 | .00 | .00 | .00 | .00 |
| 19 | .00 | .00 | 1.5 | 4.6 | 5.8 | 3.8 | 3.1 | 3.6 | .00 | .00 | .00 | .00 |
| 20 | .00 | .00 | 2.3 | 4.2 | 6.0 | 3.8 | 2.7 | 2.7 | .00 | .00 | .00 | .00 |
| 21 | .00 | .00 | 2.7 | 5.3 | 5.9 | 3.5 | 2.7 | 1.9 | .00 | .00 | .00 | .00 |
| 22 | .00 | .00 | 2.7 | 16 | 4.6 | 3.5 | 2.5 | 1.6 | .00 | .00 | .00 | .00 |
| 23 | .00 | .00 | 4.9 | 10 | 3.8 | 3.6 | 2.3 | 1.5 | .00 | .00 | .00 | .00 |
| 24 | .00 | .00 | 7.2 | 6.8 | 3.8 | 3.8 | 2.2 | 1.3 | .00 | .00 | .00 | .00 |
| 25 | .00 | .00 | 7.8 | 4.9 | 3.2 | 3.5 | 2.1 | 1.2 | .00 | .00 | .00 | .00 |
| 26 | .00 | .00 | 6.4 | 4.2 | 3.0 | 3.5 | 2.9 | 1.1 | .00 | .00 | .00 | .00 |
| 27 | .00 | .00 | 4.8 | 3.5 | 3.0 | 3.7 | 3.8 | .77 | .00 | .00 | .00 | .01 |
| 28 | .00 | .00 | 4.4 | 3.0 | 3.1 | 7.3 | 3.5 | .67 | .00 | .00 | .00 | 154 |
| 29 | .00 | .00 | 6.2 | 3.0 | 3.3 | 7.9 | 3.5 | .56 | .00 | .00 | .00 | 497 |
| 30 | 1.4 | .00 | 13 | 3.8 | --- | 7.6 | 3.1 | .44 | .00 | .00 | .00 | 71 |
| 31 | .10 | --- | 9.4 | 4.1 | --- | 5.8 | --- | .32 | --- | .00 | .00 | --- |
| TOTAL | 1.50 | .07 | 119.50 | 139.6 | 190.3 | 123.1 | 144.1 | 96.66 | .61 | .00 | .00 | 722.01 |
| MEAN | .048 | .002 | 3.85 | 4.50 | 6.56 | 3.97 | 4.80 | 3.12 | .020 | .000 | .000 | 24.1 |
| MAX | 1.4 | .05 | 13 | 16 | 19 | 7.9 | 11 | 12 | .23 | .00 | .00 | 497 |
| MIN | .00 | .00 | .00 | 3.0 | 3.0 | 2.6 | 2.1 | .32 | .00 | .00 | .00 | .00 |
| AC-FT | 3.0 | .1 | 237 | 277 | 377 | 244 | 286 | 192 | 1.2 | .00 | .00 | 1430 |

CAL YR 1979 TOTAL 24087.03 MEAN 66.0 MAX 2600 MIN .00 AC-FT 47780
WTR YR 1980 TOTAL 1537.45 MEAN 4.20 MAX 497 MIN .00 AC-FT 3050

## 08052700 LITTLE ELM CREEK NEAR AUBREY, TX

LOCATION.--Lat 33°17'00", long 96°53'33", Denton County, Hydrologic Unit 12030103, on left bank at downstream side of bridge on Farm Road 1385, 1.5 mi (2.4 km) upstream from Mustang Creek, 5.5 mi (8.8 km) east of Aubrey, and 18 mi (29 km) upstream from Lewisville Dam on the Elm Fork Trinity River.

DRAINAGE AREA.--75.5 $mi^2$ (195.5 $km^2$).

PERIOD OF RECORD.--June 1956 to September 1976, October 1979 to September 1980.
Water-quality records: Chemical analyses: January 1968. Specific conductance: December 1966 to September 1975. Water temperatures: February 1966 to September 1975. Sediment records: February 1966 to September 1975.

REVISED RECORDS.--WRD TX-70-1: 1969.

GAGE.--Water-stage recorder. Datum of gage is 534.76 ft (162.995 m) National Geodetic Vertical Datum of 1929 (State Department of Highways and Public Transportation bench mark).

REMARKS.--Records good. Some small diversions for irrigation above station. Flow is affected at times by discharge from the flood-detention pools of 17 floodwater-retarding structures with a combined detention capacity of 12,600 acre-ft (15.5 $hm^3$). These structures control runoff from 36.4 $mi^2$ (94.3 $km^2$) above station. Several observations of water temperature were obtained during the year.

AVERAGE DISCHARGE.--21 years (water year 1957-76, 1980), 43.9 $ft^3/s$ (1.243 $m^3/s$), 31,810 acre-ft/yr (39.2 $hm^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,920 $ft^3/s$ (224 $m^3/s$) Oct. 31, 1974, gage height, 17.04 ft (5.194 m); maximum gage height, 17.34 ft (5.285 m) Apr. 26, 1957; no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1900, 18.2 ft (5.55 m) in May 1941, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,340 $ft^3/s$ (151 $m^3/s$) Sept. 29 at 0815 hours, gage height, 16.38 ft (4.993 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .00 | .00 | .69 | .60 | .00 | .12 | 1.1 | .00 | .00 | .00 | .00 |
| 2 | .00 | .00 | .00 | .69 | 1.2 | .00 | .08 | .97 | .00 | .00 | .00 | .00 |
| 3 | .00 | .00 | .00 | .69 | 1.2 | .00 | .05 | .84 | .00 | .00 | .00 | .00 |
| 4 | .00 | .00 | .00 | .40 | .89 | .00 | .01 | .65 | .00 | .00 | .00 | .00 |
| 5 | .00 | .00 | .00 | .28 | .89 | .00 | .01 | .41 | .00 | .00 | .00 | .00 |
| 6 | .00 | .00 | .00 | .18 | .74 | .00 | .00 | .27 | .00 | .00 | .00 | .00 |
| 7 | .00 | .00 | .00 | .05 | .69 | .00 | .00 | .15 | .00 | .00 | .00 | .00 |
| 8 | .00 | .00 | .00 | .02 | 5.9 | .00 | .00 | .15 | .00 | .00 | .00 | .00 |
| 9 | .00 | .00 | .00 | .09 | 83 | .00 | .00 | .10 | .00 | .00 | .00 | .00 |
| 10 | .00 | .00 | .00 | .31 | 22 | .00 | .00 | .04 | .00 | .00 | .00 | .00 |
| 11 | .00 | .00 | .00 | .74 | 21 | .00 | .00 | .01 | .00 | .00 | .00 | .00 |
| 12 | .00 | .00 | .00 | .95 | 40 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 13 | .00 | .00 | .00 | .89 | 14 | .00 | .01 | .00 | .00 | .00 | .00 | .00 |
| 14 | .00 | .00 | .00 | .84 | 8.4 | .00 | .33 | .00 | .00 | .00 | .00 | .00 |
| 15 | .00 | .00 | .00 | .74 | 6.1 | .00 | .94 | .02 | .00 | .00 | .00 | .00 |
| 16 | .00 | .00 | .00 | .74 | 4.5 | .00 | 1.2 | 3.8 | .00 | .00 | .00 | .00 |
| 17 | .00 | .00 | .00 | .65 | 3.4 | .00 | 1.2 | 3.0 | .00 | .00 | .00 | .00 |
| 18 | .00 | .00 | .00 | .60 | 2.5 | .00 | .94 | 2.1 | .00 | .00 | .00 | .00 |
| 19 | .00 | .00 | .00 | .60 | 2.0 | .00 | .64 | 1.6 | .00 | .00 | .00 | .00 |
| 20 | .00 | .00 | .00 | .69 | 1.6 | .00 | .39 | 2.7 | .00 | .00 | .00 | .00 |
| 21 | .00 | .00 | .00 | .95 | 1.2 | .00 | .30 | 3.2 | 3.4 | .00 | .00 | .00 |
| 22 | .00 | .00 | .00 | 1.8 | .84 | .00 | .19 | 2.2 | 3.6 | .00 | .00 | .00 |
| 23 | .00 | .00 | .00 | 3.7 | .60 | .00 | .09 | 1.2 | 2.4 | .00 | .00 | .00 |
| 24 | .00 | .00 | 3.1 | 2.3 | .40 | .00 | .07 | .70 | 1.3 | .00 | .00 | .00 |
| 25 | .00 | .00 | 1.1 | 1.4 | .35 | .00 | .31 | .34 | .58 | .00 | .00 | .00 |
| 26 | .00 | .00 | .79 | 1.1 | .16 | .00 | .71 | .14 | .22 | .00 | .00 | .00 |
| 27 | .00 | .00 | .60 | .89 | .09 | .00 | 1.0 | .04 | .06 | .00 | .00 | .00 |
| 28 | .00 | .00 | .40 | .79 | .02 | .01 | 1.2 | .00 | .00 | .00 | .00 | 26 |
| 29 | .00 | .00 | .24 | .89 | .01 | .25 | 1.2 | .00 | .00 | .00 | .00 | 2920 |
| 30 | .00 | .00 | .24 | 1.0 | --- | .98 | 1.3 | .00 | .00 | .00 | .00 | 585 |
| 31 | .00 | --- | .35 | .65 | --- | .37 | --- | .00 | --- | .00 | .00 | --- |
| TOTAL | .00 | .00 | 6.82 | 26.31 | 224.28 | 1.61 | 12.29 | 25.73 | 11.56 | .00 | .00 | 3531.00 |
| MEAN | .000 | .000 | .22 | .85 | 7.73 | .052 | .41 | .83 | .39 | .000 | .000 | 118 |
| MAX | .00 | .00 | 3.1 | 3.7 | 83 | .98 | 1.3 | 3.8 | 3.6 | .00 | .00 | 2920 |
| MIN | .00 | .00 | .00 | .02 | .01 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| AC-FT | .00 | .00 | 14 | 52 | 445 | 3.2 | 24 | 51 | 23 | .00 | .00 | 7000 |

CAL YR 1979 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1980 TOTAL 3839.60 MEAN 10.5 MAX 2920 MIN .00 AC-FT 7620

## 08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX

LOCATION.--Lat 33°04'09", long 96°57'51", Denton County, Hydrologic Unit 12030103, in intake structure of Lewisville Dam on Elm Fork Trinity River, 2 mi (3 km) upstream from bridge on State Highway 121, 2.4 mi (3.9 km) northeast of Lewisville, 12 mi (19 km) upstream from Denton Creek, and 30.0 mi (48.3 km) upstream from mouth.

DRAINAGE AREA.--1,660 mi$^2$ (4,299 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1954 to current year. Prior to October 1970, published as Garza-Little Elm Reservoir near Lewisville.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 17, 1955, nonrecording gage at site 4,000 ft (1,220 m) upstream at same datum. Corps of Engineers gage-height telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 32,888 ft (10,024 m) long, including a 560-foot (171 m) uncontrolled off-channel concrete-gravity spillway with ogee weir section. Deliberate impoundment began Nov. 1, 1954, and the dam was completed in August 1955. The controlled low-flow outlet works consist of a 16.0-foot-diameter (4.9 m) conduit that is controlled by three 6.5- by 13.0-foot (2.0 by 4.0 m) broome-type gates and two 60-inch (1,524 mm) steel pipes with service valves. The lake was built for flood control and water conservation. The city of Dallas obtains most of its water for municipal use from this lake. The capacity table is based on a survey made in 1965. Inflow is affected at times by discharge from the flood-detention pools of 118 floodwater-retarding structures with combined detention capacity of 81,670 acre-ft (101 hm$^3$). These structures control runoff from 298 mi$^2$ (772 km$^2$) in the Elm Fork Trinity River, Clear, Little Elm, and Hickory Creeks watersheds. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 560.0 | - |
| Crest of spillway | 532.0 | 981,800 |
| Top of conservation pool | 515.0 | 457,600 |
| Lowest intakes to wet wells (invert) | 481.0 | 42,560 |
| Invert of three broome-type gates | 448.0 | 0 |

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,146,000 acre-ft (1.41 km$^3$) June 3, 1957, elevation, 535.57 ft (163.242 m); minimum since initial filling in 1957, 184,700 acre-ft (228 hm$^3$) Sept. 28, 1980, elevation, 498.65 ft (151.989 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 376,000 acre-ft (464 hm$^3$) Oct. 1 at 0100 hours, elevation, 511.27 ft (155.835 m); minimum, 184,700 acre-ft (228 hm$^3$) Sept. 28 at 0800 hours, elevation, 498.65 ft (151.989 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 498.0 | 177,100 | 506.0 | 284,800 |
| 500.0 | 201,200 | 508.0 | 317,300 |
| 502.0 | 227,200 | 510.0 | 351,900 |
| 504.0 | 254,900 | 512.0 | 391,000 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 375400 | 357300 | 345100 | 340100 | 333200 | 333400 | 321700 | 306900 | 295500 | 271300 | 236000 | 203700 |
| 2 | 373600 | 356800 | 344700 | 340300 | 333600 | 332000 | 321700 | 307100 | 294600 | 270400 | 234500 | 202800 |
| 3 | 373200 | 356000 | 344400 | 339400 | 332700 | 330300 | 321500 | 306800 | 294100 | 269200 | 233600 | 201900 |
| 4 | 372200 | 355500 | 344200 | 338900 | 332500 | 332000 | 320300 | 306100 | 293300 | 267800 | 232000 | 201200 |
| 5 | 370800 | 355500 | 344000 | 338400 | 332500 | 330800 | 319700 | 305400 | 292000 | 266900 | 231000 | 200400 |
| 6 | 370300 | 354800 | 343300 | 338100 | 332500 | 330300 | 318700 | 304800 | 290800 | 265400 | 229900 | 199300 |
| 7 | 369100 | 354000 | 343000 | 337700 | 332500 | 330300 | 318700 | 304500 | 290200 | 264500 | 229000 | 198600 |
| 8 | 368500 | 353800 | 342400 | 337000 | 334100 | 330300 | 318200 | 304100 | 289100 | 263200 | 227900 | 197700 |
| 9 | 368700 | 354000 | 342200 | 336500 | 334800 | 329500 | 317300 | 303600 | 288600 | 262300 | 227000 | 197300 |
| 10 | 366200 | 353300 | 343500 | 336800 | 335100 | 328900 | 316000 | 303000 | 287800 | 261200 | 226300 | 197100 |
| 11 | 365600 | 353100 | 342400 | 335800 | 335300 | 328600 | 316200 | 302500 | 287000 | 259900 | 225500 | 196200 |
| 12 | 364800 | 352800 | 343700 | 334900 | 335300 | 328600 | 316300 | 302200 | 285600 | 258600 | 224500 | 195400 |
| 13 | 364300 | 352000 | 343000 | 334600 | 335600 | 328600 | 316300 | 302200 | 284300 | 257400 | 223300 | 194500 |
| 14 | 362900 | 351700 | 342400 | 334100 | 335800 | 327100 | 315700 | 302000 | 283000 | 256300 | 222100 | 193600 |
| 15 | 363900 | 351100 | 342200 | 333900 | 336800 | 326700 | 315200 | 302500 | 282200 | 254700 | 221100 | 192900 |
| 16 | 363900 | 351100 | 342200 | 333600 | 336800 | 326200 | 314300 | 303200 | 281200 | 253900 | 220300 | 191900 |
| 17 | 363300 | 350600 | 341000 | 333700 | 336100 | 326700 | 314200 | 302800 | 279700 | 252800 | 219200 | 191000 |
| 18 | 362800 | 349900 | 340700 | 332900 | 335600 | 325600 | 313500 | 303000 | 279100 | 251500 | 218000 | 190000 |
| 19 | 362200 | 349700 | 340300 | 332700 | 336000 | 325000 | 313000 | 302800 | 279000 | 249800 | 217000 | 189300 |
| 20 | 361100 | 349700 | 339600 | 333000 | 335800 | 325700 | 312400 | 302500 | 279400 | 248700 | 215900 | 188200 |
| 21 | 361600 | 350100 | 339600 | 334100 | 335800 | 324000 | 311700 | 302200 | 279000 | 248000 | 214600 | 187100 |
| 22 | 361100 | 349500 | 340000 | 336000 | 335600 | 323400 | 310700 | 301700 | 280500 | 247300 | 213700 | 186500 |
| 23 | 360300 | 348400 | 341900 | 335600 | 335500 | 323400 | 310400 | 301000 | 280100 | 245700 | 212600 | 185800 |
| 24 | 359600 | 348100 | 342100 | 335300 | 335500 | 323000 | 310200 | 300700 | 279400 | 244900 | 211300 | 185200 |
| 25 | 359000 | 347900 | 341900 | 335500 | 335100 | 322200 | 309900 | 300400 | 278500 | 243400 | 210000 | 184800 |
| 26 | 358300 | 347700 | 341700 | 335500 | 333700 | 321700 | 309400 | 299900 | 277400 | 242500 | 209400 | 185300 |
| 27 | 357500 | 347700 | 341500 | 334600 | 333900 | 322200 | 308900 | 299100 | 276000 | 241600 | 208200 | 186900 |
| 28 | 357300 | 347400 | 341900 | 334600 | 333700 | 323200 | 308600 | 298600 | 274700 | 240900 | 207500 | 190700 |
| 29 | 355500 | 346100 | 341200 | 334300 | 333900 | 323400 | 308200 | 297600 | 273600 | 239800 | 206600 | 204700 |
| 30 | 357700 | 345800 | 340800 | 334100 | --- | 322900 | 307200 | 297300 | 272800 | 238700 | 205400 | 225200 |
| 31 | 358100 | --- | 340500 | 333900 | --- | 321800 | --- | 296000 | --- | 237400 | 204500 | --- |
| MAX | 375400 | 357300 | 345100 | 340300 | 336800 | 333400 | 321700 | 307100 | 295500 | 271300 | 236000 | 225200 |
| MIN | 355500 | 345800 | 339600 | 332700 | 332500 | 321700 | 307200 | 296000 | 272800 | 237400 | 204500 | 184800 |
| (†) | 510.34 | 509.66 | 509.36 | 508.98 | 508.98 | 508.27 | 507.39 | 506.70 | 505.23 | 502.75 | 500.27 | 501.85 |
| (‡) | -17900 | -12300 | -5300 | -6600 | 0 | -12100 | -14600 | -11200 | -23200 | -35400 | -32900 | +20700 |
| (††) | 1230 | 902 | 892 | 892 | 845 | 972 | 1040 | 1010 | 1670 | 2110 | 2100 | 1650 |

CAL YR 1979 MAX 548000 MIN 239600 †† 12790 ‡ +98100
WTR YR 1980 MAX 375400 MIN 184800 †† 15310 ‡ -150800

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal use by cities of Denton and Lewisville.

## 08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1969 to current year.

### 330419096575401 LEWISVILLE LAKE SITE AC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | | |
| 09... | 1025 | 1.0 | 365 | 8.1 | 7.5 | .50 | 10.6 | 88 | 130 | 13 |
| 09... | 1028 | 10 | 365 | 8.1 | 7.5 | -- | 10.6 | 88 | -- | -- |
| 09... | 1030 | 20 | 365 | 8.1 | 7.5 | -- | 10.6 | 88 | -- | -- |
| 09... | 1032 | 30 | 365 | 8.1 | 7.5 | -- | 10.6 | 88 | -- | -- |
| 09... | 1034 | 40 | 365 | 8.1 | 7.5 | -- | 10.6 | 88 | -- | -- |
| 09... | 1036 | 55 | 365 | 8.0 | 7.5 | -- | 10.6 | 88 | 130 | 12 |
| MAY | | | | | | | | | | |
| 07... | 1135 | 1.0 | 388 | 8.5 | 21.0 | 1.55 | 9.9 | 112 | 130 | 18 |
| 07... | 1138 | 10 | 388 | 8.6 | 20.0 | -- | 9.9 | 110 | -- | -- |
| 07... | 1140 | 20 | 395 | 8.1 | 17.5 | -- | 7.1 | 76 | -- | -- |
| 07... | 1142 | 30 | 395 | 8.0 | 17.0 | -- | 6.4 | 67 | -- | -- |
| 07... | 1144 | 40 | 398 | 7.8 | 16.5 | -- | 5.0 | 52 | -- | -- |
| 07... | 1146 | 49 | 405 | 7.6 | 16.0 | -- | 2.2 | 23 | 140 | 17 |
| AUG | | | | | | | | | | |
| 19... | 1205 | 1.0 | 391 | 8.1 | 28.5 | .70 | 6.6 | 86 | 120 | 15 |
| 19... | 1207 | 10 | 391 | 8.0 | 28.0 | -- | 6.2 | 79 | -- | -- |
| 19... | 1209 | 20 | 391 | 8.0 | 28.0 | -- | 6.2 | 79 | -- | -- |
| 19... | 1211 | 30 | 395 | 7.5 | 27.0 | -- | 3.0 | 38 | -- | -- |
| 19... | 1213 | 35 | 399 | 7.4 | 26.0 | -- | .2 | 2 | -- | -- |
| 19... | 1215 | 40 | 445 | 7.5 | 22.0 | -- | .1 | 1 | -- | -- |
| 19... | 1217 | 45 | 458 | 7.6 | 21.5 | -- | .1 | 1 | 160 | 0 |

| DATE | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 09... | 44 | 4.3 | 23 | .9 | 4.7 | 140 | 0 | 31 | 22 |
| 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 09... | 44 | 4.1 | 22 | .9 | 4.5 | 140 | 0 | 36 | 22 |
| MAY | | | | | | | | | |
| 07... | 44 | 4.5 | 23 | .9 | 4.3 | 130 | 2 | 38 | 23 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | 48 | 5.0 | 23 | .8 | 4.2 | 150 | 0 | 38 | 22 |
| AUG | | | | | | | | | |
| 19... | 41 | 4.6 | 28 | 1.1 | 5.2 | 130 | 0 | 43 | 30 |
| 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 19... | 55 | 4.9 | 25 | .9 | 4.6 | 200 | 0 | 24 | 27 |

## LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

### 330419096575401 LEWISVILLE LAKE SITE AC--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 09... | .3 | 4.0 | 202 | .18 | 1.1 | 1.3 | .030 | 20 | 1 |
| 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 09... | -- | -- | -- | .18 | 1.5 | 1.7 | .020 | 170 | 10 |
| 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 09... | -- | 3.8 | 205 | .12 | .95 | 1.1 | .030 | <10 | 1 |
| MAY | | | | | | | | | |
| 07... | .3 | 1.8 | 205 | .06 | .67 | .73 | .010 | <10 | <3 |
| 07... | -- | -- | -- | .18 | .59 | .77 | .020 | 10 | 10 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | .24 | .80 | 1.0 | .010 | 10 | 10 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | 3.8 | 218 | .13 | .58 | .71 | .140 | 20 | 10 |
| AUG | | | | | | | | | |
| 19... | .4 | 3.2 | 220 | .00 | 1.3 | 1.3 | .050 | <10 | 3 |
| 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 19... | -- | -- | -- | .03 | .60 | .63 | .040 | 20 | 80 |
| 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 19... | -- | -- | -- | .00 | 2.0 | 2.0 | .440 | 1700 | 2700 |
| 19... | -- | 10 | 255 | .00 | 2.7 | 2.7 | .800 | 3400 | 2400 |

### 330410096584501 LEWISVILLE LAKE SITE AL

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 09... | 1050 | 1.0 | 365 | 8.1 | 7.5 | 10.6 | 88 |
| 09... | 1052 | 10 | 365 | 8.1 | 7.5 | 10.6 | 88 |
| 09... | 1054 | 20 | 365 | 8.0 | 7.5 | 10.6 | 88 |
| 09... | 1058 | 30 | 365 | 8.0 | 7.5 | 10.6 | 88 |
| 09... | 1100 | 40 | 365 | 8.0 | 7.5 | 10.6 | 88 |
| MAY | | | | | | | |
| 07... | 1200 | 1.0 | 388 | 8.5 | 20.5 | 9.6 | 108 |
| 07... | 1202 | 10 | 388 | 8.6 | 20.0 | 9.6 | 107 |
| 07... | 1204 | 20 | 393 | 8.1 | 18.0 | 7.2 | 77 |
| 07... | 1206 | 30 | 395 | 8.0 | 17.0 | 6.4 | 67 |
| 07... | 1208 | 36 | 395 | 7.9 | 16.5 | 5.6 | 58 |
| AUG | | | | | | | |
| 19... | 1300 | 1.0 | 391 | 8.0 | 28.0 | 6.0 | 77 |
| 19... | 1302 | 10 | 393 | 7.9 | 28.0 | 5.3 | 68 |
| 19... | 1304 | 20 | 393 | 7.8 | 28.0 | 4.9 | 63 |
| 19... | 1306 | 31 | 393 | 7.6 | 27.5 | 3.7 | 47 |

### 330450096560501 LEWISVILLE LAKE SITE BC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 09... | 1110 | 1.0 | 400 | 8.2 | 7.0 | 11.0 | 91 |
| 09... | 1112 | 10 | 400 | 8.2 | 7.0 | 10.9 | 90 |
| 09... | 1114 | 20 | 400 | 8.2 | 7.0 | 10.8 | 89 |
| 09... | 1116 | 27 | 400 | 8.2 | 7.0 | 10.8 | 89 |
| MAY | | | | | | | |
| 07... | 1215 | 1.0 | 413 | 8.3 | 23.0 | 9.2 | 108 |
| 07... | 1218 | 5.0 | 413 | 8.4 | 22.5 | 9.3 | 108 |
| 07... | 1220 | 10 | 390 | 8.5 | 20.0 | 9.5 | 106 |
| 07... | 1222 | 20 | 427 | 7.6 | 17.5 | 2.6 | 28 |
| 07... | 1224 | 24 | 427 | 7.5 | 17.5 | 2.4 | 26 |
| AUG | | | | | | | |
| 19... | 1320 | 1.0 | 393 | 8.3 | 29.0 | 7.6 | 100 |
| 19... | 1322 | 10 | 393 | 8.2 | 28.5 | 7.2 | 94 |
| 19... | 1324 | 18 | 408 | 8.2 | 28.0 | 6.6 | 85 |

## LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

### 330606097025601 LEWISVILLE LAKE SITE CC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMP-LING DEPTH (FT) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 09... | 1000 | 1.0 | 367 | 8.2 | 7.0 | 11.0 | 91 |
| 09... | 1002 | 10 | 367 | 8.2 | 7.0 | 11.0 | 91 |
| 09... | 1004 | 21 | 367 | 8.2 | 6.5 | 10.8 | 89 |
| MAY | | | | | | | |
| 07... | 1110 | 1.0 | 391 | 8.1 | 23.0 | 8.1 | 95 |
| 07... | 1112 | 10 | 396 | 7.6 | 20.0 | 4.8 | 53 |
| 07... | 1114 | 17 | 404 | 7.3 | 18.5 | 1.1 | 12 |
| AUG | | | | | | | |
| 19... | 1830 | 1.0 | 402 | 8.4 | 30.0 | 7.5 | 100 |
| 19... | 1832 | 5.0 | 402 | 8.3 | 29.0 | 6.8 | 89 |
| 19... | 1834 | 11 | 402 | 8.1 | 28.0 | 5.6 | 72 |

### 330755096572001 LEWISVILLE LAKE SITE DC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMP-LING DEPTH (FT) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | TRANS-PAR-ENCY (SECCHI DISK) (M) | OXYGEN, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 09... | 1145 | 1.0 | 370 | 8.1 | 7.5 | .40 | 10.7 |
| 09... | 1148 | 10 | 370 | 8.1 | 7.0 | -- | 10.7 |
| 09... | 1150 | 20 | 370 | 8.1 | 7.0 | -- | 10.6 |
| 09... | 1152 | 32 | 370 | 7.9 | 7.0 | -- | 9.5 |
| MAY | | | | | | | |
| 07... | 1245 | 1.0 | 390 | 8.3 | 24.5 | 1.04 | 9.2 |
| 07... | 1246 | 5.0 | 390 | 8.4 | 23.0 | -- | 9.6 |
| 07... | 1248 | 10 | 390 | 8.4 | 22.5 | -- | 9.5 |
| 07... | 1250 | 15 | 395 | 7.8 | 21.0 | -- | 5.4 |
| 07... | 1252 | 20 | 406 | 7.4 | 18.5 | -- | .9 |
| 07... | 1254 | 28 | 406 | 7.5 | 18.0 | -- | .7 |
| AUG | | | | | | | |
| 19... | 1450 | 1.0 | 396 | 8.3 | 29.0 | .40 | 7.1 |
| 19... | 1452 | 10 | 396 | 8.2 | 28.5 | -- | 6.7 |
| 19... | 1454 | 21 | 396 | 8.2 | 28.5 | -- | 6.1 |

| DATE | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | IRON, DIS-SOLVED (UG/L AS FE) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 09... | 89 | .13 | 1.2 | 1.3 | .030 | 0 | 0 |
| 09... | 88 | -- | -- | -- | -- | -- | -- |
| 09... | 88 | -- | -- | -- | -- | -- | -- |
| 09... | 79 | .15 | 1.2 | 1.4 | .050 | 30 | 0 |
| MAY | | | | | | | |
| 07... | 114 | .03 | 1.0 | 1.0 | .020 | 20 | 10 |
| 07... | 113 | -- | -- | -- | -- | -- | -- |
| 07... | 110 | -- | -- | -- | -- | -- | -- |
| 07... | 61 | -- | -- | -- | -- | -- | -- |
| 07... | 10 | -- | -- | -- | -- | -- | -- |
| 07... | 8 | .03 | .42 | .45 | .080 | 10 | 40 |
| AUG | | | | | | | |
| 19... | 93 | .00 | 1.3 | 1.3 | .060 | 20 | 10 |
| 19... | 87 | -- | -- | -- | -- | -- | -- |
| 19... | 79 | .00 | 1.0 | 1.0 | .100 | 30 | 10 |

## LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

### 330959096565301 LEWISVILLE LAKE SITE EC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 09... | 1205 | 1.0 | 384 | 8.2 | 7.0 | .40 | 11.1 | 92 | 130 |
| 09... | 1208 | 10 | 384 | 8.2 | 7.0 | -- | 11.0 | 91 | -- |
| 09... | 1210 | 20 | 384 | 8.1 | 6.5 | -- | 10.6 | 87 | 140 |
| MAY | | | | | | | | | |
| 07... | 1315 | 1.0 | 389 | 8.3 | 25.5 | .55 | 8.6 | 106 | 130 |
| 07... | 1318 | 5.0 | 389 | 8.2 | 24.0 | -- | 8.2 | 99 | -- |
| 07... | 1320 | 10 | 395 | 8.0 | 23.5 | -- | 6.6 | 79 | -- |
| 07... | 1322 | 17 | 413 | 7.3 | 21.5 | -- | .7 | 8 | 140 |
| AUG | | | | | | | | | |
| 19... | 1530 | 1.0 | 408 | 8.4 | 29.5 | .20 | 7.2 | 95 | 120 |
| 19... | 1532 | 10 | 415 | 8.1 | 28.5 | -- | 6.3 | 82 | 120 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 09... | 18 | 46 | 4.4 | 22 | .8 | 4.5 | 140 | 0 | 37 |
| 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 09... | 22 | 46 | 4.2 | 22 | .8 | 4.5 | 140 | 0 | 32 |
| MAY | | | | | | | | | |
| 07... | 14 | 44 | 4.7 | 24 | .9 | 4.5 | 140 | 0 | 40 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | 17 | 48 | 5.0 | 24 | .9 | 4.3 | 150 | 0 | 41 |
| AUG | | | | | | | | | |
| 19... | 17 | 41 | 4.5 | 29 | 1.1 | 5.8 | 120 | 3 | 46 |
| 19... | 17 | 42 | 4.6 | 30 | 1.2 | 5.7 | 130 | 0 | 47 |

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 09... | 22 | 2.7 | 208 | .04 | 1.9 | 1.9 | .040 | <10 | <1 |
| 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 09... | 22 | 2.6 | 204 | .02 | 1.3 | 1.3 | .040 | <10 | 4 |
| MAY | | | | | | | | | |
| 07... | 23 | 2.3 | 212 | .01 | .84 | .85 | .010 | 20 | 4 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | 23 | 3.5 | 223 | .40 | 2.4 | 2.8 | .260 | 10 | 340 |
| AUG | | | | | | | | | |
| 19... | 33 | 3.0 | 224 | .00 | .94 | .94 | .100 | <10 | <1 |
| 19... | 33 | 3.0 | 229 | .00 | 1.1 | 1.1 | .130 | <10 | 5 |

## 330722096592201 LEWISVILLE LAKE SITE FC

## WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 09... | 1250 | 1.0 | 397 | 8.1 | 7.0 | .30 | 10.7 | 89 | -- |
| 09... | 1252 | 10 | 410 | 8.1 | 7.0 | -- | 10.5 | 88 | -- |
| 09... | 1254 | 20 | 410 | 8.1 | 6.5 | -- | 10.5 | 86 | -- |
| MAY | | | | | | | | | |
| 07... | 1410 | 1.0 | 390 | 8.3 | 24.0 | .70 | 9.6 | 116 | -- |
| 07... | 1412 | 10 | 390 | 8.3 | 22.0 | -- | 9.3 | 108 | -- |
| 07... | 1414 | 20 | 416 | 7.9 | 20.5 | -- | 5.9 | 66 | -- |
| AUG | | | | | | | | | |
| 19... | 1710 | 1.0 | 511 | 8.4 | 29.0 | .20 | 7.5 | 99 | 150 |
| 19... | 1712 | 5.0 | 511 | 8.4 | 29.0 | -- | 7.5 | 99 | -- |
| 19... | 1714 | 11 | 509 | 8.4 | 29.0 | -- | 7.3 | 96 | 150 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 09... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY | | | | | | | | | |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| AUG | | | | | | | | | |
| 19... | 6 | 52 | 5.1 | 40 | 1.4 | 6.5 | 170 | 3 | 52 |
| 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 19... | 8 | 53 | 5.2 | 41 | 1.4 | 6.6 | 170 | 4 | 54 |

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 09... | -- | -- | -- | .19 | 1.2 | 1.4 | .090 | 20 | 0 |
| 09... | -- | -- | -- | .17 | 1.3 | 1.5 | .110 | 420 | 40 |
| 09... | -- | -- | -- | .22 | 1.2 | 1.4 | .120 | 20 | 0 |
| MAY | | | | | | | | | |
| 07... | -- | -- | -- | .03 | 1.6 | 1.6 | .040 | 130 | 10 |
| 07... | -- | -- | -- | .04 | 1.2 | 1.2 | .020 | 170 | 10 |
| 07... | -- | -- | -- | .12 | 1.6 | 1.7 | .020 | 160 | 20 |
| AUG | | | | | | | | | |
| 19... | 43 | 2.3 | 288 | .00 | .82 | .82 | .210 | <10 | 2 |
| 19... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 19... | 43 | 2.2 | 293 | .00 | .95 | .95 | .150 | <10 | 1 |

## LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

### 330944097003601 LEWISVILLE LAKE SITE GC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 09... | 1310 | 1.0 | 415 | 8.1 | 6.5 | .20 | 10.9 | 89 | 140 |
| 09... | 1312 | 5.0 | 415 | 8.1 | 6.5 | -- | 10.9 | 89 | 150 |
| MAY | | | | | | | | | |
| 07... | 1430 | 1.0 | 442 | 8.2 | 25.5 | .21 | 7.6 | 94 | 130 |
| 07... | 1432 | 3.0 | 446 | 8.0 | 24.5 | -- | 5.9 | 72 | 140 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 09... | 7 | 48 | 4.5 | 28 | 1.0 | 4.7 | 160 | 0 | 36 |
| 09... | 14 | 51 | 4.4 | 31 | 1.1 | 4.8 | 160 | 0 | 37 |
| MAY | | | | | | | | | |
| 07... | 10 | 45 | 5.1 | 35 | 1.3 | 4.9 | 150 | 0 | 43 |
| 07... | 13 | 46 | 5.1 | 35 | 1.3 | 4.9 | 150 | 0 | 43 |

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 09... | 28 | 3.8 | 232 | .16 | 1.3 | 1.5 | .130 | 10 | <1 |
| 09... | 28 | 4.0 | 239 | .21 | 1.2 | 1.4 | .120 | 20 | <1 |
| MAY | | | | | | | | | |
| 07... | 34 | 1.0 | 242 | .01 | 1.3 | 1.3 | .170 | 10 | <3 |
| 07... | 33 | 1.1 | 242 | .01 | .91 | .92 | .040 | 20 | <3 |

## LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

## 330419096575401 LEWISVILLE LAKE SITE AC

## PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| | | | |
|---|---|---|---|
| DATE | JAN 9,80 | MAY 7,80 | AUG 19,80 |
| TIME | 1026 | 1136 | 1206 |
| TOTAL CELLS/ML | 660 | 1800 | 22000 |
| DIVERSITY: DIVISION | 1.6 | 1.0 | 0.5 |
| .CLASS | 1.6 | 1.0 | 0.5 |
| ..ORDER | 1.7 | 1.0 | 1.0 |
| ...FAMILY | 2.0 | 2.0 | 1.1 |
| ....GENUS | 2.6 | 3.5 | 1.4 |

| ORGANISM | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | 5 | 1 | 13 | 1 | * | 0 |
| ...COELASTRACEAE | | | | | | |
| ....COELASTRUM | -- | - | 180 | 10 | 230 | 1 |
| ...MICRACTINIACEAE | | | | | | |
| ....GOLENKINIA | -- | - | 13 | 1 | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 60 | 9 | -- | - | * | 0 |
| ....CHLORELLA | 20 | 3 | 120 | 7 | -- | - |
| ....CHODATELLA | -- | - | 370# | 21 | -- | - |
| ....CLOSTERIOPSIS | -- | - | 13 | 1 | -- | - |
| ....DICTYOSPHAERIUM | -- | - | 51 | 3 | * | 0 |
| ....KIRCHNERIELLA | 25 | 4 | 77 | 4 | -- | - |
| ....OOCYSTIS | -- | - | 260 | 14 | 230 | 1 |
| ....SELENASTRUM | -- | - | 77 | 4 | -- | - |
| ....TREUBARIA | -- | - | 64 | 4 | -- | - |
| ...SCENEDESMACEAE | | | | | | |
| ....SCENEDESMUS | 30 | 5 | -- | - | 230 | 1 |
| ....TETRASTRUM | 40 | 6 | 150 | 9 | 150 | 1 |
| ..TETRASPORALES | | | | | | |
| ...COCCOMYXACEAE | | | | | | |
| ....ELAKATOTHRIX | -- | - | -- | - | * | 0 |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | -- | - | * | 0 |
| ...VOLVOCACEAE | | | | | | |
| ....PANDORINA | -- | - | -- | - | 210 | 1 |
| ..ZYGNEMATALES | | | | | | |
| ...DESMIDIACEAE | | | | | | |
| ....COSMARIUM | -- | - | -- | - | * | 0 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 140# | 20 | 130 | 7 | 120 | 1 |
| ....MELOSIRA | -- | - | 26 | 1 | 230 | 1 |
| ....SKELETONEMA | 70 | 11 | -- | - | -- | - |
| ..PENNALES | | | | | | |
| ...FRAGILARIACEAE | | | | | | |
| ....SYNEDRA | -- | - | -- | - | * | 0 |
| ...NAVICULACEAE | | | | | | |
| ....NAVICULA | -- | - | -- | - | * | 0 |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 15 | 2 | 26 | 1 | 120 | 1 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | -- | - | -- | - | 1400 | 6 |
| ....ANACYSTIS | -- | - | 190 | 11 | 550 | 2 |
| ....COCCOCHLORIS | -- | - | 13 | 1 | -- | - |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENA | 260# | 39 | -- | - | -- | - |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | -- | - | 18000# | 80 |
| ....OSCILLATORIA | -- | - | -- | - | 620 | 3 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....TRACHELOMONAS | -- | - | -- | - | * | 0 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

### 330944097003601 LEWISVILLE LAKE SITE GC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO MAY 1980

| | | |
|---|---|---|
| DATE | JAN 9,80 | MAY 7,80 |
| TIME | 1311 | 1431 |
| TOTAL CELLS/ML | 11000 | 17000 |
| DIVERSITY: DIVISION | 1.1 | 1.3 |
| .CLASS | 1.1 | 1.3 |
| ..ORDER | 1.5 | 1.8 |
| ...FAMILY | 1.7 | 2.0 |
| ....GENUS | 2.5 | 2.6 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | |
| .CHLOROPHYCEAE | | | | |
| ..CHLOROCOCCALES | | | | |
| ...MICRACTINIACEAE | | | | |
| ....GOLENKINIA | -- | - | * | 0 |
| ...OOCYSTACEAE | | | | |
| ....ANKISTRODESMUS | 2800# | 25 | 190 | 1 |
| ....CHLORELLA | 780 | 7 | * | 0 |
| ....CHODATELLA | -- | - | 270 | 2 |
| ....DICTYOSPHAERIUM | -- | - | * | 0 |
| ....GLOEOACTINIUM | -- | - | 1300 | 8 |
| ....KIRCHNERIELLA | 870 | 8 | -- | - |
| ....OOCYSTIS | 390 | 3 | 580 | 3 |
| ....SELENASTRUM | -- | - | 230 | 1 |
| ....TREUBARIA | -- | - | * | 0 |
| ....WESTELLA | -- | - | 150 | 1 |
| ...SCENEDESMACEAE | | | | |
| ....SCENEDESMUS | -- | - | 1100 | 6 |
| ....TETRASTRUM | 390 | 3 | 150 | 1 |
| ..VOLVOCALES | | | | |
| ...CHLAMYDOMONADACEAE | | | | |
| ....CHLAMYDOMONAS | 97 | 1 | -- | - |
| CHRYSOPHYTA | | | | |
| .BACILLARIOPHYCEAE | | | | |
| ..CENTRALES | | | | |
| ...COSCINODISCACEAE | | | | |
| ....CYCLOTELLA | 4700# | 41 | 1100 | 6 |
| ....MELOSIRA | 390 | 3 | 420 | 2 |
| ..PENNALES | | | | |
| ...NAVICULACEAE | | | | |
| ....NAVICULA | 780 | 7 | -- | - |
| ...NITZSCHIACEAE | | | | |
| ....NITZSCHIA | 97 | 1 | 190 | 1 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | |
| .CRYPTOPHYCEAE | | | | |
| ..CRYPTOMONADALES | | | | |
| ...CRYPTOMONADACEAE | | | | |
| ....CRYPTOMONAS | -- | - | * | 0 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | |
| .CYANOPHYCEAE | | | | |
| ..CHROOCOCCALES | | | | |
| ...CHROOCOCCACEAE | | | | |
| ....ANACYSTIS | -- | - | 1600 | 9 |
| ....COCCOCHLORIS | -- | - | 190 | 1 |
| ..HORMOGONALES | | | | |
| ...OSCILLATORIACEAE | | | | |
| ....OSCILLATORIA | -- | - | 9300# | 54 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | |
| .EUGLENOPHYCEAE | | | | |
| ..EUGLENALES | | | | |
| ...EUGLENACEAE | | | | |
| ....EUGLENA | 190 | 2 | 150 | 1 |
| ....TRACHELOMONAS | -- | - | * | 0 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 08053000 ELM FORK TRINITY RIVER NEAR LEWISVILLE, TX

LOCATION.--Lat 33°02'43", long 96°57'41", Denton County, Hydrologic Unit 12030103, on left bank at downstream side of pier of bridge on State Highway 121, 1.8 mi (2.9 km) east of Lewisville, 1.9 mi (3.1 km) downstream from Lewisville Lake, 8.3 mi (13.4 km) upstream from Denton Creek, and 28.2 mi (45.4 km) upstream from mouth.

DRAINAGE AREA.--1,673 mi² (4,333 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1949 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 432.39 ft (131.792 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Jan. 6, 1950, nonrecording gage 0.6 mi (1.0 km) upstream at datum 3.26 ft (0.994 m) lower.

REMARKS.--Water-discharge records good. Flow regulated by Lewisville Lake (see station 08052800) since November 1954. Most of low flow is used by city of Dallas for municipal supply (see station 08055500). The Corps of Engineers operates a gage-height telemeter located at station.

AVERAGE DISCHARGE.--31 years, 565 ft³/s (16.00 m³/s), 409,300 acre-ft/yr (505 hm³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,700 ft³/s (615 m³/s) Sept. 15, 1950, gage height, 30.75 ft (9.373 m); minimum daily, 0.8 ft³/s (0.023 m³/s) Jan. 19, 1955. Maximum discharge since construction of Lewisville Dam in 1954, 11,400 ft³/s (323 m³/s) May 27, 1957, and does not include about 4,000 ft³/s (113 m³/s) that discharged over spillway of Lewisville Dam and by-passed this gaging station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1907, 33.8 ft (10.30 m) in 1908, present site and datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 462 ft³/s (13.1 m³/s) Aug. 21 at 0400 hours, gage height, 7.13 ft (2.173 m); maximum gage height, 7.27 ft (2.216 m) June 14; minimum daily discharge, 35 ft³/s (0.99 m³/s) Feb. 12, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 218 | 121 | 97 | 111 | 95 | 131 | 135 | 249 | 209 | 335 | 395 | 217 |
| 2 | 219 | 110 | 93 | 129 | 105 | 93 | 151 | 193 | 172 | 323 | 396 | 332 |
| 3 | 212 | 97 | 96 | 169 | 105 | 96 | 160 | 183 | 199 | 336 | 392 | 340 |
| 4 | 216 | 109 | 105 | 191 | 81 | 107 | 186 | 195 | 279 | 363 | 386 | 239 |
| 5 | 229 | 132 | 112 | 177 | 56 | 145 | 214 | 207 | 237 | 367 | 295 | 263 |
| 6 | 213 | 124 | 113 | 153 | 53 | 164 | 186 | 262 | 288 | 328 | 310 | 230 |
| 7 | 213 | 92 | 113 | 143 | 48 | 155 | 164 | 185 | 310 | 322 | 383 | 236 |
| 8 | 228 | 116 | 109 | 178 | 41 | 156 | 203 | 142 | 265 | 337 | 380 | 227 |
| 9 | 251 | 121 | 105 | 244 | 39 | 156 | 224 | 149 | 189 | 356 | 217 | 116 |
| 10 | 173 | 100 | 105 | 239 | 37 | 185 | 264 | 134 | 157 | 338 | 337 | 113 |
| 11 | 153 | 100 | 109 | 157 | 38 | 196 | 267 | 165 | 226 | 362 | 261 | 139 |
| 12 | 267 | 91 | 112 | 184 | 35 | 149 | 148 | 155 | 293 | 390 | 306 | 205 |
| 13 | 235 | 87 | 110 | 188 | 35 | 131 | 144 | 144 | 289 | 386 | 333 | 230 |
| 14 | 186 | 110 | 105 | 176 | 49 | 153 | 124 | 98 | 316 | 365 | 351 | 284 |
| 15 | 214 | 134 | 104 | 157 | 62 | 199 | 121 | 93 | 250 | 350 | 301 | 299 |
| 16 | 219 | 112 | 105 | 143 | 62 | 155 | 139 | 51 | 284 | 386 | 228 | 263 |
| 17 | 160 | 107 | 152 | 160 | 62 | 135 | 186 | 48 | 297 | 402 | 303 | 280 |
| 18 | 137 | 115 | 228 | 187 | 86 | 180 | 164 | 56 | 308 | 416 | 322 | 237 |
| 19 | 137 | 115 | 232 | 184 | 107 | 193 | 204 | 84 | 283 | 428 | 314 | 237 |
| 20 | 181 | 99 | 176 | 133 | 86 | 176 | 234 | 113 | 233 | 422 | 357 | 237 |
| 21 | 201 | 89 | 126 | 120 | 71 | 168 | 284 | 103 | 171 | 375 | 417 | 287 |
| 22 | 184 | 88 | 108 | 151 | 70 | 214 | 272 | 152 | 168 | 271 | 380 | 288 |
| 23 | 170 | 89 | 112 | 70 | 75 | 192 | 237 | 93 | 176 | 335 | 361 | 287 |
| 24 | 116 | 98 | 80 | 86 | 88 | 146 | 190 | 131 | 178 | 393 | 386 | 163 |
| 25 | 124 | 105 | 74 | 103 | 102 | 146 | 122 | 135 | 250 | 404 | 393 | 161 |
| 26 | 164 | 89 | 88 | 103 | 100 | 146 | 97 | 152 | 331 | 393 | 309 | 96 |
| 27 | 194 | 79 | 131 | 103 | 93 | 136 | 106 | 190 | 363 | 330 | 302 | 78 |
| 28 | 198 | 88 | 144 | 103 | 119 | 131 | 120 | 178 | 380 | 330 | 284 | 89 |
| 29 | 197 | 126 | 152 | 93 | 136 | 129 | 147 | 123 | 380 | 330 | 226 | 139 |
| 30 | 199 | 127 | 127 | 84 | --- | 121 | 211 | 134 | 350 | 348 | 265 | 132 |
| 31 | 141 | --- | 111 | 83 | --- | 119 | --- | 261 | --- | 397 | 226 | --- |
| TOTAL | 5949 | 3170 | 3734 | 4502 | 2136 | 4697 | 5410 | 4316 | 7862 | 11263 | 10122 | 6340 |
| MEAN | 192 | 106 | 120 | 145 | 73.7 | 152 | 180 | 139 | 262 | 363 | 327 | 211 |
| MAX | 267 | 134 | 232 | 244 | 136 | 214 | 284 | 262 | 380 | 428 | 417 | 340 |
| MIN | 116 | 79 | 74 | 70 | 35 | 93 | 97 | 48 | 157 | 271 | 217 | 89 |
| AC-FT | 11800 | 6290 | 7410 | 8930 | 4240 | 9320 | 10730 | 8560 | 15590 | 22340 | 20080 | 12570 |

CAL YR 1979 TOTAL 138013 MEAN 378 MAX 3250 MIN 31 AC-FT 273700
WTR YR 1980 TOTAL 69901 MEAN 191 MAX 428 MIN 35 AC-FT 138600

## 08053000 ELM FORK TRINITY RIVER NEAR LEWISVILLE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1949 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: November 1976 to current year.

INSTRUMENTATION.--Water temperature is recorded continuously at this station.

REMARKS.--Water temperature record is fair. Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum values are not shown, mean value is estimated.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 33.0°C July 27, 1977; minimum, 0.0°C Jan. 31 and Feb. 9, 1979.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 29.5°C on several days during June and July; minimum, 4.5°C Jan. 31 and Feb. 1.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | --- | --- | 26.0 | 19.5 | 17.5 | 18.5 | 12.5 | 10.0 | 11.0 | 10.5 | 8.0 | 9.0 |
| 2 | --- | --- | 25.5 | 19.5 | 17.5 | 18.5 | 12.5 | 10.0 | 11.0 | 10.0 | 8.5 | 9.0 |
| 3 | --- | --- | 24.0 | 19.5 | 17.0 | 18.0 | 12.5 | 10.0 | 11.0 | 9.0 | 8.0 | 8.5 |
| 4 | --- | --- | 23.5 | 19.0 | 17.0 | 17.5 | 12.5 | 10.0 | 11.0 | 9.0 | 8.0 | 8.0 |
| 5 | --- | --- | 23.0 | 18.5 | 17.0 | 17.5 | 12.5 | 10.0 | 11.0 | 9.0 | 8.0 | 8.0 |
| 6 | --- | --- | 23.0 | 18.0 | 15.5 | 16.5 | 12.0 | 10.0 | 10.5 | 10.0 | 8.0 | 8.5 |
| 7 | --- | --- | 23.5 | 17.0 | 15.5 | 16.0 | 12.0 | 10.0 | 10.5 | 8.5 | 7.0 | 7.5 |
| 8 | --- | --- | 24.0 | 17.0 | 16.0 | 16.5 | 12.0 | 10.0 | 10.5 | 8.5 | 6.5 | 7.5 |
| 9 | --- | --- | 24.0 | 16.5 | 15.5 | 16.0 | 11.5 | 10.0 | 10.5 | 8.5 | 7.0 | 7.5 |
| 10 | --- | --- | 23.5 | 16.0 | 14.0 | 15.0 | 12.0 | 10.0 | 11.0 | 8.5 | 7.5 | 8.0 |
| 11 | --- | --- | 23.0 | 16.5 | 14.0 | 15.0 | 13.5 | 11.0 | 12.0 | 9.0 | 7.5 | 8.0 |
| 12 | --- | --- | 23.0 | 15.0 | 14.0 | 14.5 | 11.0 | 9.0 | 9.5 | 8.5 | 7.5 | 8.0 |
| 13 | --- | --- | 23.0 | 16.0 | 13.5 | 14.5 | 10.5 | 9.0 | 9.5 | 9.0 | 7.5 | 8.0 |
| 14 | --- | --- | 22.5 | 16.0 | 13.5 | 14.5 | 10.5 | 9.5 | 10.0 | 9.5 | 7.5 | 8.5 |
| 15 | --- | --- | 22.0 | 15.5 | 13.5 | 14.0 | 11.5 | 9.0 | 10.0 | 10.0 | 8.0 | 9.0 |
| 16 | --- | --- | 21.5 | 16.0 | 13.0 | 14.0 | 9.5 | 7.5 | 9.0 | 10.0 | 8.5 | 9.0 |
| 17 | --- | --- | 21.5 | 15.5 | 13.5 | 14.5 | 9.0 | 6.5 | 7.5 | 10.5 | 8.5 | 9.0 |
| 18 | --- | --- | 22.0 | 15.5 | 14.5 | 15.0 | 8.5 | 7.5 | 8.0 | 10.5 | 8.5 | 9.0 |
| 19 | 22.0 | --- | 21.0 | 16.5 | 15.0 | 15.5 | 9.5 | 8.0 | 8.5 | 9.5 | 8.5 | 9.0 |
| 20 | 22.5 | 21.0 | 21.5 | 16.5 | 15.0 | 15.5 | 10.0 | 8.0 | 9.0 | 9.5 | 9.0 | 9.0 |
| 21 | 23.0 | 21.0 | 21.5 | 16.0 | 14.0 | 15.5 | 11.0 | 9.0 | 10.0 | 9.5 | 8.5 | 9.0 |
| 22 | 21.5 | 20.0 | 20.5 | 14.5 | 13.0 | 13.5 | 11.5 | 9.5 | 10.0 | 10.0 | 7.5 | 8.5 |
| 23 | 21.5 | 19.5 | 20.5 | 15.0 | 12.0 | 13.0 | 11.5 | 10.0 | 10.5 | 11.0 | 7.0 | 8.5 |
| 24 | 21.5 | 19.0 | 20.0 | 14.5 | 13.0 | 13.5 | 11.5 | 9.0 | 10.0 | 11.0 | 8.0 | 9.0 |
| 25 | 21.5 | 19.0 | 20.0 | 15.0 | 13.0 | 13.5 | 11.5 | 8.0 | 9.5 | 10.0 | 8.5 | 9.0 |
| 26 | 21.0 | 19.5 | 20.0 | 15.0 | 12.0 | 13.5 | 11.5 | 8.5 | 9.5 | 8.5 | 7.5 | 8.5 |
| 27 | 21.0 | 19.5 | 20.0 | 15.0 | 12.0 | 13.5 | 10.5 | 9.5 | 10.0 | 7.5 | 7.0 | 7.5 |
| 28 | 21.5 | 19.5 | 20.0 | 13.5 | 11.5 | 12.0 | 10.0 | 9.5 | 9.5 | 7.0 | 6.5 | 6.5 |
| 29 | 21.0 | 19.5 | 20.0 | 12.0 | 10.5 | 11.0 | 9.5 | 9.0 | 9.5 | 13.0 | 6.0 | 6.5 |
| 30 | 20.0 | 19.0 | 19.5 | 12.5 | 10.0 | 11.0 | 10.0 | 8.5 | 9.0 | 6.5 | 5.5 | 6.5 |
| 31 | 20.0 | 18.0 | 19.0 | --- | --- | --- | 10.0 | 8.0 | 9.0 | 7.0 | 4.5 | 5.5 |
| MONTH | 23.0 | 18.0 | 22.0 | 19.5 | 10.0 | 15.0 | 13.5 | 6.5 | 10.0 | 13.0 | 4.5 | 8.0 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 7.0 | 4.5 | 5.5 | 9.0 | 6.0 | 7.5 | --- | --- | 13.0 | 18.0 | 16.5 | 17.0 |
| 2 | 7.5 | 5.5 | 6.0 | 10.0 | 5.5 | 7.0 | --- | --- | 14.0 | 20.5 | 16.5 | 18.5 |
| 3 | 8.5 | 5.5 | 6.5 | 10.0 | 6.0 | 7.5 | --- | --- | 14.5 | 20.5 | 18.5 | 19.0 |
| 4 | 10.0 | 5.5 | 7.5 | 11.5 | 8.0 | 9.0 | --- | --- | 14.0 | 21.5 | 18.5 | 19.5 |
| 5 | 11.0 | 7.0 | 8.0 | 10.5 | 7.0 | 8.5 | --- | --- | 13.5 | 21.0 | 18.5 | 19.5 |
| 6 | 11.0 | 6.0 | 8.0 | 11.0 | 7.5 | 9.0 | --- | --- | 14.5 | 20.5 | 18.0 | 19.0 |
| 7 | --- | --- | 8.0 | 12.0 | 9.0 | 10.0 | --- | --- | 15.0 | 22.0 | 18.0 | 19.5 |
| 8 | --- | --- | 7.5 | 11.0 | 9.0 | 10.0 | --- | --- | 16.0 | 20.5 | 18.5 | 19.5 |
| 9 | --- | --- | 7.0 | 12.0 | 9.5 | 10.5 | --- | --- | 15.0 | 21.5 | 18.5 | 19.5 |
| 10 | --- | --- | 6.0 | 11.5 | 10.0 | 10.5 | --- | --- | 15.5 | 21.0 | 18.0 | 19.0 |
| 11 | --- | --- | 6.5 | 11.5 | 10.0 | 10.5 | --- | --- | 16.0 | 21.5 | 18.5 | 19.5 |
| 12 | --- | --- | 7.0 | 14.5 | 10.0 | 11.5 | --- | --- | 14.5 | 22.0 | 19.5 | 20.0 |
| 13 | --- | --- | 8.5 | 13.5 | 11.0 | 12.0 | --- | --- | 13.5 | 21.0 | 19.5 | 20.5 |
| 14 | --- | --- | 8.5 | 13.5 | 11.0 | 11.5 | --- | --- | 12.5 | 23.0 | 20.0 | 21.0 |
| 15 | --- | --- | 9.0 | 13.0 | 10.5 | 11.5 | --- | --- | 14.0 | 20.0 | 19.5 | 19.5 |
| 16 | --- | --- | 8.0 | 13.5 | 11.5 | 12.5 | --- | --- | 15.0 | 25.5 | 18.5 | 21.0 |
| 17 | --- | --- | 6.5 | 14.0 | 11.5 | 12.5 | 16.5 | --- | 15.5 | 26.0 | 20.0 | 22.5 |
| 18 | --- | --- | 5.0 | 13.5 | 11.0 | 12.0 | 17.5 | 14.0 | 15.5 | 25.5 | 20.0 | 21.5 |
| 19 | --- | --- | 5.5 | 13.0 | 11.5 | 12.0 | 18.0 | 15.0 | 16.0 | 24.0 | 20.0 | 22.0 |
| 20 | --- | --- | 7.5 | 15.0 | 12.0 | 13.0 | 17.5 | 15.0 | 16.0 | 25.0 | 21.5 | 23.0 |
| 21 | --- | --- | 8.5 | 15.0 | 11.5 | 12.5 | 17.5 | 15.0 | 15.5 | 26.0 | 21.5 | 23.0 |
| 22 | --- | --- | 9.0 | 16.0 | 12.0 | 12.5 | 16.5 | 14.5 | 15.0 | 24.5 | 22.0 | 23.0 |
| 23 | --- | --- | 8.5 | --- | --- | 13.0 | 17.0 | 15.0 | 15.5 | 26.5 | 21.5 | 23.5 |
| 24 | --- | --- | 8.5 | --- | --- | 12.5 | 16.5 | 15.0 | 15.5 | 25.0 | 21.0 | 22.5 |
| 25 | --- | --- | 8.0 | --- | --- | 12.0 | 19.0 | 15.5 | 16.5 | 26.0 | 21.5 | 23.5 |
| 26 | --- | --- | 7.5 | --- | --- | 12.0 | 16.5 | 15.5 | 16.5 | 25.5 | 22.0 | 23.5 |
| 27 | --- | --- | 8.0 | --- | --- | 12.5 | 18.0 | 15.5 | 16.5 | 25.0 | 22.5 | 23.5 |
| 28 | --- | --- | 8.5 | --- | --- | 12.5 | 19.5 | 15.5 | 17.0 | 26.5 | 23.5 | 24.5 |
| 29 | 10.0 | 8.0 | 9.0 | --- | --- | 13.0 | 20.0 | 16.5 | 17.5 | 25.0 | 21.5 | 23.5 |
| 30 | --- | --- | --- | --- | --- | 12.5 | 18.0 | 16.5 | 17.0 | 24.5 | 22.0 | 23.5 |
| 31 | --- | --- | --- | --- | --- | 12.0 | --- | --- | --- | 24.5 | 22.5 | 23.5 |
| MONTH | 11.0 | 4.5 | 7.5 | 15.0 | 5.5 | 11.0 | 20.0 | 16.0 | 15.0 | 26.5 | 16.5 | 21.0 |

## 08053000 ELM FORK TRINITY RIVER NEAR LEWISVILLE, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 24.0 | 21.5 | 23.0 | 29.0 | 27.0 | 27.5 | 29.0 | 27.5 | 28.0 | 29.0 | 26.5 | 27.5 |
| 2 | 26.0 | 22.5 | 24.0 | 29.5 | 27.0 | 28.0 | 29.0 | 27.5 | 28.0 | 28.5 | 26.5 | 27.0 |
| 3 | 25.5 | 23.5 | 24.0 | 29.0 | 27.0 | 28.0 | 29.0 | 27.0 | 28.0 | 28.0 | 26.5 | 27.0 |
| 4 | 26.0 | 23.5 | 24.5 | 29.0 | 27.0 | 28.0 | 28.5 | 27.0 | 27.5 | 29.0 | 26.5 | 27.0 |
| 5 | 26.5 | 23.5 | 24.5 | 29.0 | 27.0 | 28.0 | 28.5 | 26.5 | 27.5 | 28.5 | 26.5 | 27.0 |
| 6 | 26.0 | 24.0 | 25.0 | 29.5 | 27.0 | 28.0 | 28.5 | 26.5 | 27.5 | 28.5 | 26.5 | 27.5 |
| 7 | 26.5 | 24.0 | 25.5 | 29.0 | 27.5 | 28.5 | 28.5 | 26.5 | 27.5 | 28.5 | 27.0 | 27.5 |
| 8 | 26.5 | 25.0 | 25.5 | 29.5 | 27.5 | 28.5 | 28.5 | 26.5 | 27.5 | 28.0 | 26.5 | 27.0 |
| 9 | 26.5 | 25.0 | 25.5 | 29.5 | 28.0 | 28.5 | 29.0 | 26.5 | 27.5 | 28.5 | 26.0 | 27.0 |
| 10 | 28.0 | 24.5 | 26.0 | 29.5 | 28.0 | 28.5 | 28.5 | 27.0 | 27.5 | 29.0 | 26.5 | 27.5 |
| 11 | 27.0 | 24.5 | 25.5 | --- | --- | 28.5 | 28.0 | 27.0 | 27.5 | 28.5 | 26.0 | 27.0 |
| 12 | 26.5 | 24.5 | 25.5 | --- | --- | 28.5 | --- | --- | 27.5 | 28.5 | 26.5 | 27.0 |
| 13 | 26.5 | 24.5 | 25.0 | --- | --- | 28.5 | --- | --- | 27.5 | 28.5 | 26.5 | 27.0 |
| 14 | 26.5 | 24.0 | 25.0 | --- | --- | 28.5 | --- | --- | 27.5 | 28.0 | 26.0 | 27.0 |
| 15 | 27.0 | 24.0 | 25.5 | --- | --- | 28.5 | --- | --- | 27.5 | 28.0 | 26.0 | 27.0 |
| 16 | 27.0 | 25.0 | 26.0 | --- | --- | 28.5 | --- | --- | 27.5 | 28.0 | 26.5 | 27.0 |
| 17 | 26.5 | 24.5 | 25.5 | --- | --- | 28.5 | --- | --- | 27.5 | 28.0 | 26.0 | 27.0 |
| 18 | 28.0 | 25.0 | 26.0 | --- | --- | 28.5 | --- | --- | 27.5 | 28.0 | 26.0 | 27.0 |
| 19 | 27.5 | 25.5 | 26.5 | --- | --- | 28.5 | 28.5 | --- | 27.5 | 27.5 | 26.0 | 26.5 |
| 20 | 28.0 | 25.5 | 26.5 | --- | --- | 28.5 | 28.5 | 26.5 | 27.0 | 27.0 | 26.0 | 26.5 |
| 21 | 29.0 | 25.5 | 27.0 | --- | --- | 28.5 | 28.5 | 26.5 | 27.5 | 27.5 | 26.0 | 26.5 |
| 22 | 28.5 | 26.0 | 27.0 | --- | --- | 28.5 | 28.5 | 26.5 | 27.5 | 27.5 | 26.0 | 26.5 |
| 23 | 28.5 | 26.0 | 27.0 | --- | --- | 28.5 | 29.0 | 27.0 | 28.0 | 28.0 | 26.0 | 26.5 |
| 24 | 29.5 | 26.0 | 27.0 | --- | --- | 28.5 | 28.5 | 26.5 | 27.5 | 26.5 | 26.0 | 26.5 |
| 25 | 29.0 | 26.5 | 27.5 | --- | --- | 28.5 | 28.5 | 26.5 | 27.5 | 27.0 | 25.5 | 26.0 |
| 26 | 29.5 | 26.5 | 28.0 | --- | --- | 28.5 | 28.5 | 26.5 | 27.5 | 26.0 | 23.5 | 25.5 |
| 27 | 29.0 | 26.5 | 27.5 | --- | --- | 28.5 | 29.0 | 26.5 | 27.5 | 23.0 | 19.0 | 21.0 |
| 28 | 28.0 | 26.5 | 27.0 | --- | --- | 28.5 | 28.5 | 26.5 | 27.5 | 21.0 | 18.5 | 20.0 |
| 29 | 28.0 | 26.5 | 27.0 | --- | --- | 28.5 | 28.5 | 26.0 | 27.0 | 20.0 | 17.5 | 18.5 |
| 30 | 29.0 | 27.0 | 27.5 | --- | --- | 28.5 | 28.5 | 26.0 | 27.0 | 22.5 | 20.0 | 21.5 |
| 31 | --- | --- | --- | 29.0 | --- | 28.5 | 28.5 | 26.5 | 27.0 | --- | --- | --- |
| MONTH | 29.5 | 21.5 | 26.0 | 29.5 | 27.0 | 28.5 | 29.0 | 26.0 | 27.5 | 29.0 | 17.5 | 26.0 |

## 08053500 DENTON CREEK NEAR JUSTIN, TX

LOCATION.--Lat 33°07'08", long 97°17'25", Denton County, Hydrologic Unit 12030104, on right bank at downstream side of bridge on Farm Road 156, 100 ft (30 m) upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 2.2 mi (3.5 km) north of Justin, 3.0 mi (4.8 km) upstream from Olivers Creek, 12.9 mi (20.8 km) upstream from Harriet Creek, and 32.9 mi (52.9 km) upstream from Grapevine Dam.

DRAINAGE AREA.--400 mi$^2$ (1,036 km$^2$).

PERIOD OF RECORD.--October 1949 to current year.
Water-quality records: Sediment records: February 1966 to September 1975.

REVISED RECORDS.--WSP 1732: 1950(M). WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 606.66 ft (184.910 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several small diversions above station. Flow is affected at times by discharge from the flood-detention pools of 84 floodwater-retarding structures with combined detention capacity of 52,750 acre-ft (65.0 hm$^3$). These structures control runoff from 197 mi$^2$ (510 km$^2$) in the Denton Creek watershed. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--31 years, 77.4 ft$^3$/s (2.192 m$^3$/s), 56,080 acre-ft/yr (69.1 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,800 ft$^3$/s (844 m$^3$/s) May 24, 1957, gage height, 17.64 ft (5.377 m); no flow at times in 1949-65, 1967-74, 1976-80.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1935 was the highest since 1908 and reached a stage of 20.6 ft (6.28 m) at site about 1,500 ft (457 m) upstream, from information by local resident. Flood in May 1908 reached a stage about 1.0 ft (0.30 m) higher than flood in May 1935, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,780 ft$^3$/s (50.4 m$^3$/s) Sept. 29 at 0615 hours, gage height, 10.75 ft (3.277 m), no peak above base of 3,000 ft$^3$/s (85.0 m$^3$/s); no flow Oct. 1 to Dec. 23, May 27 to Sept. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .00 | .00 | 3.9 | 4.8 | 5.7 | 4.4 | 2.2 | .00 | .00 | .00 | .00 |
| 2 | .00 | .00 | .00 | 2.9 | 3.7 | 4.7 | 3.9 | 3.1 | .00 | .00 | .00 | .00 |
| 3 | .00 | .00 | .00 | 2.1 | 4.6 | 5.4 | 4.2 | 5.4 | .00 | .00 | .00 | .00 |
| 4 | .00 | .00 | .00 | 1.8 | 5.1 | 5.1 | 3.9 | 6.5 | .00 | .00 | .00 | .00 |
| 5 | .00 | .00 | .00 | 1.7 | 4.8 | 6.2 | 4.6 | 4.1 | .00 | .00 | .00 | .00 |
| 6 | .00 | .00 | .00 | 1.6 | 4.6 | 6.8 | 4.8 | 5.1 | .00 | .00 | .00 | .00 |
| 7 | .00 | .00 | .00 | 1.3 | 4.6 | 6.2 | 5.4 | 5.1 | .00 | .00 | .00 | .00 |
| 8 | .00 | .00 | .00 | 1.2 | 8.4 | 5.9 | 4.4 | 6.2 | .00 | .00 | .00 | .00 |
| 9 | .00 | .00 | .00 | 1.6 | 48 | 5.9 | 3.3 | 6.8 | .00 | .00 | .00 | .00 |
| 10 | .00 | .00 | .00 | 1.6 | 16 | 6.2 | 3.1 | 8.7 | .00 | .00 | .00 | .00 |
| 11 | .00 | .00 | .00 | 1.8 | 12 | 5.9 | 3.3 | 6.2 | .00 | .00 | .00 | .00 |
| 12 | .00 | .00 | .00 | 1.8 | 15 | 6.2 | 3.5 | 4.8 | .00 | .00 | .00 | .00 |
| 13 | .00 | .00 | .00 | 2.1 | 16 | 6.2 | 6.5 | 4.1 | .00 | .00 | .00 | .00 |
| 14 | .00 | .00 | .00 | 2.1 | 12 | 5.9 | 8.0 | 3.7 | .00 | .00 | .00 | .00 |
| 15 | .00 | .00 | .00 | 1.9 | 9.2 | 5.6 | 7.7 | 5.7 | .00 | .00 | .00 | .00 |
| 16 | .00 | .00 | .00 | 2.1 | 7.4 | 5.1 | 6.8 | 6.1 | .00 | .00 | .00 | .00 |
| 17 | .00 | .00 | .00 | 2.1 | 6.8 | 4.8 | 4.8 | 7.3 | .00 | .00 | .00 | .00 |
| 18 | .00 | .00 | .00 | 2.2 | 6.3 | 4.8 | 3.9 | 6.9 | .00 | .00 | .00 | .00 |
| 19 | .00 | .00 | .00 | 2.4 | 8.2 | 5.1 | 3.1 | 5.8 | .00 | .00 | .00 | .00 |
| 20 | .00 | .00 | .00 | 2.3 | 8.5 | 4.6 | 2.9 | 1.2 | .00 | .00 | .00 | .00 |
| 21 | .00 | .00 | .00 | 3.1 | 7.8 | 4.4 | 2.9 | .80 | .00 | .00 | .00 | .00 |
| 22 | .00 | .00 | .00 | 7.1 | 6.6 | 4.8 | 2.6 | .50 | .00 | .00 | .00 | .00 |
| 23 | .00 | .00 | .00 | 12 | 6.1 | 5.1 | 2.6 | .25 | .00 | .00 | .00 | .00 |
| 24 | .00 | .00 | .42 | 9.8 | 5.6 | 5.1 | 2.6 | .17 | .00 | .00 | .00 | .00 |
| 25 | .00 | .00 | 3.3 | 5.4 | 5.6 | 5.1 | 2.9 | .09 | .00 | .00 | .00 | .00 |
| 26 | .00 | .00 | 2.6 | 3.5 | 5.6 | 5.6 | 2.9 | .02 | .00 | .00 | .00 | .00 |
| 27 | .00 | .00 | 1.5 | 2.9 | 5.6 | 5.6 | 2.9 | .00 | .00 | .00 | .00 | .00 |
| 28 | .00 | .00 | .95 | 2.6 | 5.8 | 8.4 | 3.1 | .00 | .00 | .00 | .00 | .00 |
| 29 | .00 | .00 | 1.5 | 2.6 | 6.0 | 9.8 | 2.6 | .00 | .00 | .00 | .00 | 914 |
| 30 | .00 | .00 | 5.1 | 2.9 | --- | 7.1 | 2.2 | .00 | .00 | .00 | .00 | 107 |
| 31 | .00 | --- | 6.4 | 4.4 | --- | 5.1 | --- | .00 | --- | .00 | .00 | --- |
| TOTAL | .00 | .00 | 21.77 | 96.8 | 260.7 | 178.4 | 119.8 | 106.83 | .00 | .00 | .00 | 1021.00 |
| MEAN | .000 | .000 | .70 | 3.12 | 8.99 | 5.75 | 3.99 | 3.45 | .000 | .000 | .000 | 34.0 |
| MAX | .00 | .00 | 6.4 | 12 | 48 | 9.8 | 8.0 | 8.7 | .00 | .00 | .00 | 914 |
| MIN | .00 | .00 | .00 | 1.2 | 3.7 | 4.4 | 2.2 | .00 | .00 | .00 | .00 | .00 |
| AC-FT | .00 | .00 | 43 | 192 | 517 | 354 | 238 | 212 | .00 | .00 | .00 | 2030 |

CAL YR 1979 TOTAL 20597.58 MEAN 56.4 MAX 2480 MIN .00 AC-FT 40860
WTR YR 1980 TOTAL 1805.30 MEAN 4.93 MAX 914 MIN .00 AC-FT 3580

## 08054500 GRAPEVINE LAKE NEAR GRAPEVINE, TX

LOCATION.--Lat 32°58'21", long 97°03'22", Tarrant County, Hydrologic Unit 12030104, in intake structure of Grapevine Dam on Denton Creek, 2.7 mi (4.3 km) northeast of Grapevine, 4.3 mi (6.9 km) upstream from bridge on State Highway 121, and 11.7 mi (18.8 km) upstream from mouth.

DRAINAGE AREA.--695 mi² (1,800 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1952 to current year. Prior to October 1970, published as Grapevine Reservoir.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 16, 1953, nonrecording gage at site 1,000 ft (305 m) upstream at present datum. Corps of Engineers gage-height telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 12,850 ft (3,917 m) long, including a 500-foot (150 m) uncontrolled off-channel concrete-gravity spillway with an ogee weir section. The dam was completed in June 1952 and deliberate impoundment began July 3, 1952. The controlled outlet works consist of a 13.0-foot-diameter (4.0 m) concrete conduit that is controlled by two 6.5- by 13.0-foot (2.0 by 4.0 m) broome-type gates and two 30-inch (762 mm) steel pipes with service valves. The capacity table used since April 1972 is based on a survey made in October 1966. The lake was built for flood control, navigation, and water conservation. The city of Dallas uses part of this water for their municipal supply. Inflow is affected at times by discharge from the flood-detention pools of 87 floodwater-retarding structures with a combined detention capacity of 57,850 acre-ft (71.3 hm³). These structures control runoff from 217 mi² (562 km²) in the Denton Creek watershed. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam.......................................................... | 588.0 | - |
| Crest of spillway.................................................... | 560.0 | 425,500 |
| Top of conservation pool............................................. | 535.0 | 181,100 |
| Lowest intake to wet wells (invert).................................. | 500.5 | 22,140 |
| Invert of two broome-type gates...................................... | 475.0 | 100 |

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 445,800 acre-ft (550 hm³) June 6, 1957, elevation, 560.80 ft (170.932 m); minimum since lake first filled in 1957, 94,480 acre-ft (116 hm³) Feb. 26, 1979, elevation, 520.67 ft (158.700 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 165,700 acre-ft (204 hm³) Oct. 1 at 0001 hours, elevation, 532.84 ft (162.410 m); minimum, 101,800 acre-ft (126 hm³) Sept. 26 at 2030 hours, elevation, 522.09 ft (159.133 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 522.0 | 101,300 | | |
| 524.0 | 111,800 | 530.0 | 146,800 |
| 526.0 | 123,700 | 532.0 | 160,000 |
| 528.0 | 134,300 | 534.0 | 173,900 |

### CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 165500 | 158300 | 151000 | 146900 | 142900 | 140100 | 138300 | 136200 | 134100 | 128500 | 119400 | 109400 |
| 2 | 165100 | 157900 | 150800 | 146600 | 142700 | 139700 | 138400 | 136300 | 133800 | 128100 | 119100 | 109000 |
| 3 | 164800 | 157500 | 150600 | 146400 | 142500 | 139500 | 138300 | 136100 | 133600 | 127800 | 118800 | 108600 |
| 4 | 164400 | 157200 | 150300 | 146200 | 142200 | 139600 | 138200 | 136000 | 133300 | 127400 | 118500 | 108300 |
| 5 | 163800 | 157000 | 150200 | 146000 | 142100 | 139400 | 138100 | 135900 | 133100 | 127300 | 118100 | 108000 |
| 6 | 163700 | 156700 | 150000 | 145800 | 141900 | 139300 | 138000 | 135800 | 132900 | 126900 | 117900 | 107700 |
| 7 | 163700 | 156500 | 149800 | 145600 | 141600 | 139400 | 138000 | 135600 | 132700 | 126600 | 117700 | 107400 |
| 8 | 163400 | 156300 | 149500 | 145300 | 141700 | 139300 | 137700 | 135800 | 132600 | 126200 | 117400 | 107300 |
| 9 | 162900 | 156300 | 149300 | 145200 | 142000 | 139200 | 137600 | 135600 | 132400 | 126100 | 117100 | 107200 |
| 10 | 162500 | 156000 | 149100 | 145000 | 142100 | 139200 | 137600 | 135500 | 132200 | 125700 | 116900 | 106900 |
| 11 | 162200 | 155700 | 149200 | 145000 | 142000 | 139100 | 137500 | 135300 | 131900 | 125300 | 116600 | 106600 |
| 12 | 162000 | 155400 | 149500 | 144800 | 141900 | 139300 | 137400 | 135300 | 131800 | 125000 | 116200 | 106200 |
| 13 | 161600 | 155100 | 149300 | 144500 | 141900 | 139100 | 137800 | 135300 | 131500 | 124600 | 115900 | 105800 |
| 14 | 161200 | 154900 | 149000 | 144300 | 141800 | 139000 | 137500 | 135300 | 131200 | 124400 | 115500 | 105600 |
| 15 | 161600 | 154700 | 148800 | 144200 | 141800 | 138900 | 137400 | 135800 | 131100 | 124100 | 115100 | 105400 |
| 16 | 161600 | 154500 | 148600 | 144100 | 141700 | 139100 | 137200 | 135700 | 130900 | 123700 | 114700 | 105000 |
| 17 | 161300 | 154200 | 148400 | 143900 | 141700 | 138800 | 137300 | 135500 | 130700 | 123400 | 114400 | 104700 |
| 18 | 161100 | 154100 | 148100 | 143800 | 141500 | 138600 | 137300 | 135400 | 130400 | 123100 | 114000 | 104500 |
| 19 | 160900 | 153900 | 147900 | 143600 | 141400 | 138600 | 137100 | 135400 | 130100 | 122900 | 113600 | 104200 |
| 20 | 160600 | 153700 | 147700 | 143600 | 141300 | 138600 | 137000 | 135400 | 130800 | 122600 | 113400 | 103800 |
| 21 | 160200 | 153600 | 147700 | 144100 | 141200 | 138400 | 136800 | 135400 | 130800 | 122400 | 113100 | 103500 |
| 22 | 160100 | 153500 | 147900 | 144600 | 141200 | 138300 | 136700 | 135300 | 130700 | 122100 | 112700 | 103200 |
| 23 | 160000 | 153200 | 148300 | 144500 | 141100 | 138600 | 136700 | 135100 | 130500 | 121800 | 112400 | 103000 |
| 24 | 159700 | 152900 | 148200 | 144300 | 141000 | 138300 | 136800 | 135000 | 130200 | 121500 | 112100 | 102500 |
| 25 | 159400 | 152600 | 148000 | 144100 | 140900 | 138100 | 136900 | 134900 | 130000 | 121200 | 111700 | 102100 |
| 26 | 159100 | 152400 | 147800 | 143900 | 140700 | 138000 | 136700 | 134800 | 129800 | 120900 | 111400 | 102100 |
| 27 | 158900 | 152200 | 147600 | 143800 | 140600 | 138300 | 136500 | 134700 | 129500 | 120800 | 111100 | 102400 |
| 28 | 158600 | 152000 | 147600 | 143600 | 140300 | 138600 | 136400 | 134600 | 129200 | 120700 | 110700 | 103000 |
| 29 | 158300 | 151700 | 147500 | 143400 | 140300 | 138800 | 136200 | 134500 | 129000 | 120400 | 110400 | 105000 |
| 30 | 159000 | 151400 | 147300 | 143300 | --- | 138800 | 136100 | 134300 | 128800 | 120100 | 110100 | 106200 |
| 31 | 158600 | --- | 147100 | 143100 | --- | 138400 | --- | 134100 | --- | 119900 | 109700 | --- |
| MAX | 165500 | 158300 | 151000 | 146900 | 142900 | 140100 | 138400 | 136300 | 134100 | 128500 | 119400 | 109400 |
| MIN | 158300 | 151400 | 147100 | 143100 | 140300 | 138000 | 136100 | 134100 | 128800 | 119900 | 109700 | 102100 |
| (†) | 531.80 | 531.70 | 530.05 | 529.43 | 528.98 | 528.67 | 528.30 | 527.97 | 527.08 | 525.49 | 523.61 | 522.93 |
| (‡) | -7100 | -7200 | -4300 | -4000 | -2800 | -1900 | -2300 | -2000 | -5300 | -8900 | -10200 | -3500 |
| (††) | 181 | 121 | 127 | 110 | 111 | 132 | 153 | 152 | 227 | 236 | 227 | 196 |

CAL YR 1979 MAX 184900 MIN 94480 †† +48850 ‡ 1840
WTR YR 1980 MAX 165500 MIN 102100 †† -59500 ‡ 1970

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal use by city of Grapevine.

## 08054500 GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

### 325751097033001 GRAPEVINE LAKE SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 10... | 0905 | 1.0 | 366 | 8.1 | 8.5 | 10.7 | 94 |
| 10... | 0906 | 10 | 366 | 8.1 | 8.5 | 10.7 | 94 |
| 10... | 0907 | 20 | 366 | 8.1 | 8.5 | 10.7 | 94 |
| 10... | 0908 | 30 | 366 | 8.1 | 8.5 | 10.7 | 94 |
| 10... | 0909 | 40 | 366 | 8.1 | 8.5 | 10.7 | 94 |
| 10... | 0910 | 53 | 366 | 8.1 | 8.5 | 10.6 | 93 |
| MAY | | | | | | | |
| 06... | 1120 | 1.0 | 377 | 8.4 | 22.5 | 9.7 | 113 |
| 06... | 1122 | 10 | 377 | 8.5 | 20.5 | 9.7 | 108 |
| 06... | 1124 | 20 | 385 | 8.2 | 18.5 | 7.5 | 79 |
| 06... | 1126 | 30 | 385 | 8.2 | 17.5 | 7.3 | 77 |
| 06... | 1128 | 37 | 385 | 8.1 | 17.5 | 7.0 | 74 |
| AUG | | | | | | | |
| 20... | 1125 | 1.0 | 376 | 8.3 | 28.0 | 7.4 | 95 |
| 20... | 1127 | 10 | 376 | 8.3 | 28.0 | 7.4 | 95 |
| 20... | 1129 | 20 | 376 | 8.3 | 27.5 | 7.3 | 94 |
| 20... | 1131 | 30 | 376 | 8.2 | 27.5 | 7.0 | 90 |

### 325822097030401 GRAPEVINE LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | | |
| 10... | 0845 | 1.0 | 366 | 8.1 | 8.5 | .80 | 10.7 | 94 | 140 | 24 |
| 10... | 0847 | 10 | 366 | 8.1 | 8.5 | -- | 10.7 | 94 | -- | -- |
| 10... | 0849 | 20 | 366 | 8.1 | 8.5 | -- | 10.7 | 94 | -- | -- |
| 10... | 0852 | 30 | 366 | 8.1 | 8.5 | -- | 10.7 | 94 | -- | -- |
| 10... | 0854 | 40 | 366 | 8.1 | 8.5 | -- | 10.7 | 94 | -- | -- |
| 10... | 0856 | 50 | 366 | 8.0 | 8.5 | -- | 10.7 | 94 | 140 | 8 |
| MAY | | | | | | | | | | |
| 06... | 1050 | 1.0 | 377 | 8.4 | 22.5 | 1.37 | 9.7 | 113 | 140 | 20 |
| 06... | 1052 | 10 | 377 | 8.5 | 20.5 | -- | 9.7 | 108 | -- | -- |
| 06... | 1054 | 20 | 382 | 8.2 | 18.0 | -- | 7.7 | 82 | -- | -- |
| 06... | 1056 | 30 | 386 | 8.1 | 17.5 | -- | 6.9 | 73 | -- | -- |
| 06... | 1058 | 40 | 386 | 8.1 | 17.0 | -- | 6.8 | 71 | -- | -- |
| 06... | 1100 | 47 | 389 | 7.7 | 17.0 | -- | 4.9 | 51 | 140 | 20 |
| AUG | | | | | | | | | | |
| 20... | 1015 | 1.0 | 376 | 8.3 | 28.0 | 1.30 | 7.5 | 96 | 130 | 16 |
| 20... | 1019 | 20 | 376 | 8.2 | 27.5 | -- | 7.4 | 95 | -- | -- |
| 20... | 1021 | 30 | 376 | 8.2 | 27.5 | -- | 7.4 | 95 | -- | -- |
| 20... | 1023 | 35 | 391 | 7.4 | 25.0 | -- | .2 | 2 | -- | -- |
| 20... | 1025 | 40 | 409 | 7.6 | 22.0 | -- | .2 | 2 | -- | -- |
| 20... | 1027 | 43 | 409 | 7.6 | 21.5 | -- | .2 | 2 | 150 | 0 |

## GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

### 325822097030401 GRAPEVINE LAKE SITE AC--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 10... | 46 | 5.9 | 20 | .7 | 4.5 | 140 | 0 | 30 | 23 |
| 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10... | 46 | 6.0 | 20 | .7 | 4.5 | 160 | 0 | 31 | 22 |
| MAY | | | | | | | | | |
| 06... | 45 | 6.2 | 19 | .7 | 4.1 | 140 | 2 | 31 | 21 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | 47 | 6.2 | 19 | .7 | 4.0 | 150 | 0 | 31 | 22 |
| AUG | | | | | | | | | |
| 20... | 42 | 6.2 | 22 | .8 | 4.9 | 140 | 0 | 35 | 28 |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | 49 | 5.9 | 20 | .7 | 4.5 | 180 | 0 | 23 | 25 |

| DATE | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | IRON, DIS-SOLVED (UG/L AS FE) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 10... | .3 | 3.5 | 202 | .09 | 1.0 | 1.1 | .010 | 20 | <1 |
| 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10... | -- | -- | -- | .12 | .96 | 1.1 | .020 | 80 | 0 |
| 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10... | -- | 4.0 | 212 | .08 | .99 | 1.1 | .020 | 80 | 5 |
| MAY | | | | | | | | | |
| 06... | .2 | .3 | 198 | .03 | .52 | .55 | .010 | <10 | <3 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | .08 | .76 | .84 | .010 | 40 | 10 |
| 06... | -- | -- | -- | .10 | .67 | .77 | .010 | 10 | 0 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | 1.4 | 205 | .13 | .96 | 1.1 | .020 | 20 | 20 |
| AUG | | | | | | | | | |
| 20... | .3 | 2.8 | 210 | .00 | .49 | .49 | .020 | <10 | 2 |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | -- | -- | -- | .00 | .82 | .82 | .010 | 20 | 30 |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | -- | 6.4 | 226 | .00 | 1.3 | 1.3 | .150 | 1100 | 2500 |

## 325930097053801 GRAPEVINE LAKE SITE BC

## WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 10... | 0945 | 1.0 | 366 | 8.1 | 8.5 | .80 | 10.8 | 95 | 140 |
| 10... | 0947 | 10 | 366 | 8.1 | 8.5 | -- | 10.8 | 95 | -- |
| 10... | 0948 | 20 | 366 | 8.1 | 8.5 | -- | 10.8 | 95 | -- |
| 10... | 0949 | 30 | 366 | 8.1 | 8.5 | -- | 10.8 | 95 | -- |
| 10... | 0950 | 41 | 366 | 8.1 | 8.5 | -- | 10.8 | 95 | 140 |
| MAY | | | | | | | | | |
| 06... | 1140 | 1.0 | 379 | 8.4 | 23.0 | 1.52 | 9.3 | 109 | 140 |
| 06... | 1142 | 10 | 379 | 8.4 | 20.0 | -- | 9.0 | 100 | -- |
| 06... | 1144 | 20 | 383 | 8.2 | 18.0 | -- | 7.6 | 81 | -- |
| 06... | 1146 | 30 | 388 | 7.9 | 18.5 | -- | 5.4 | 57 | -- |
| 06... | 1148 | 40 | 388 | 7.8 | 17.0 | -- | 4.7 | 49 | 140 |
| AUG | | | | | | | | | |
| 20... | 1150 | 1.0 | 374 | 8.4 | 28.5 | 1.00 | 7.4 | 96 | 130 |
| 20... | 1152 | 10 | 374 | 8.3 | 28.0 | -- | 7.2 | 92 | -- |
| 20... | 1154 | 20 | 374 | 8.3 | 28.0 | -- | 6.9 | 88 | -- |
| 20... | 1156 | 25 | 374 | 8.3 | 28.0 | -- | 7.1 | 91 | -- |
| 20... | 1158 | 30 | 380 | 7.6 | 27.0 | -- | 3.0 | 38 | -- |
| 20... | 1200 | 36 | 401 | 7.5 | 24.5 | -- | .2 | 2 | 140 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 10... | 0 | 45 | 6.1 | 19 | .7 | 4.5 | 170 | 0 | 32 |
| 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10... | 23 | 46 | 5.6 | 20 | .7 | 4.5 | 140 | 0 | 30 |
| MAY | | | | | | | | | |
| 06... | 19 | 45 | 6.1 | 19 | .7 | 4.1 | 140 | 2 | 31 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | 17 | 46 | 6.2 | 19 | .7 | 4.1 | 150 | 0 | 31 |
| AUG | | | | | | | | | |
| 20... | 18 | 41 | 6.1 | 22 | .8 | 5.0 | 130 | 2 | 35 |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | 3 | 47 | 6.2 | 20 | .7 | 4.7 | 170 | 0 | 27 |

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 10... | 24 | 2.9 | 217 | .10 | .91 | 1.0 | .010 | 10 | <1 |
| 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10... | -- | -- | -- | .10 | 1.1 | 1.2 | .020 | 0 | 0 |
| 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10... | 23 | 3.4 | 202 | .04 | .98 | 1.0 | .010 | <10 | <1 |
| MAY | | | | | | | | | |
| 06... | 21 | .4 | 198 | .03 | .74 | .77 | .010 | <10 | <3 |
| 06... | -- | -- | -- | .04 | .64 | .68 | .010 | 10 | 10 |
| 06... | -- | -- | -- | .08 | .63 | .71 | .010 | 40 | 30 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | 22 | 1.3 | 204 | .11 | .70 | .81 | .050 | 10 | 5 |
| AUG | | | | | | | | | |
| 20... | 28 | 2.8 | 206 | .00 | .55 | .55 | .010 | <10 | 2 |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | -- | -- | -- | .00 | .54 | .54 | .020 | 20 | 10 |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20... | -- | -- | -- | .00 | 1.1 | 1.1 | .030 | 30 | 210 |
| 20... | 26 | 5.5 | 223 | .00 | 1.2 | 1.2 | .080 | 500 | 2000 |

## GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

### 325933097081401 GRAPEVINE LAKE SITE CC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 10... | 1020 | 13 | 366 | 8.2 | 8.5 | .70 | 11.3 |
| 10... | 1022 | 13 | 366 | 8.2 | 8.5 | -- | 11.3 |
| MAY | | | | | | | |
| 06... | 1245 | 1.0 | 380 | 8.3 | 21.5 | .88 | 9.1 |
| 06... | 1248 | 9.0 | 385 | 8.0 | 20.0 | -- | 6.7 |
| AUG | | | | | | | |
| 20... | 1250 | 1.0 | 371 | 8.4 | 29.0 | .40 | 7.5 |
| 20... | 1252 | 6.0 | 371 | 8.4 | 28.0 | -- | 7.0 |

| DATE | OXYGEN, DISSOLVED (PERCENT SATURATION) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 10... | 99 | .07 | -- | -- | .010 | 0 | 0 |
| 10... | 99 | .06 | -- | -- | .010 | 0 | 0 |
| MAY | | | | | | | |
| 06... | 103 | .03 | .60 | .63 | .010 | 20 | 10 |
| 06... | 74 | .07 | .48 | .55 | .040 | 0 | 0 |
| AUG | | | | | | | |
| 20... | 99 | .00 | .72 | .72 | .030 | 20 | 10 |
| 20... | 90 | .00 | .67 | .67 | .040 | 30 | 10 |

### 330106097094601 GRAPEVINE LAKE SITE DC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 10... | 1055 | 1.0 | 368 | 8.2 | 8.0 | .50 | 11.2 |
| 10... | 1057 | 12 | 368 | 8.2 | 8.0 | -- | 11.1 |
| MAY | | | | | | | |
| 06... | 1310 | 1.0 | 385 | 8.2 | 24.0 | .67 | 9.2 |
| 06... | 1312 | 5.0 | 391 | 7.8 | 20.5 | -- | 5.6 |
| 06... | 1314 | 10 | 391 | 7.6 | 20.0 | -- | 4.2 |
| AUG | | | | | | | |
| 20... | 1345 | 1.3 | 380 | 8.4 | 29.0 | .20 | 7.5 |
| 20... | 1347 | 5.0 | 380 | 8.2 | 28.8 | -- | 6.7 |

## GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

### 330106097094601 GRAPEVINE LAKE SITE DC--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | IRON, DIS-SOLVED (UG/L AS FE) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 10... | 97 | .06 | -- | -- | .020 | 0 | 0 |
| 10... | 96 | .09 | -- | -- | .020 | 10 | 0 |
| MAY | | | | | | | |
| 06... | 110 | .08 | .53 | .61 | .030 | 20 | 10 |
| 06... | 62 | -- | -- | -- | -- | -- | -- |
| 06... | 47 | .06 | .64 | .70 | .060 | 50 | 20 |
| AUG | | | | | | | |
| 20... | 99 | -- | -- | -- | -- | -- | -- |
| 20... | 88 | .00 | .88 | .88 | .080 | 10 | 10 |

### 330207097103701 GRAPEVINE LAKE SITE EC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMP-LING DEPTH (FT) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH (UNITS) | TEMPER-ATURE, WATER (DEG C) | TRANS-PAR-ENCY (SECCHI DISK) (M) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | HARD-NESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 10... | 1115 | 1.0 | 370 | 8.2 | 8.0 | .20 | 11.1 | 96 | 140 |
| 10... | 1117 | 10 | 366 | 8.2 | 8.0 | -- | 11.1 | 96 | 140 |
| MAY | | | | | | | | | |
| 06... | 1322 | 1.0 | 385 | 8.3 | 24.0 | .46 | 8.9 | 106 | 140 |
| 06... | 1324 | 6.0 | 399 | 7.5 | 20.5 | -- | 2.9 | 32 | 150 |
| AUG | | | | | | | | | |
| 20... | 1315 | 3.0 | 374 | 8.5 | 29.5 | .20 | 8.1 | 107 | 130 |

| DATE | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 10... | 19 | 47 | 5.9 | 20 | .7 | 4.5 | 150 | 0 | 31 |
| 10... | 21 | 48 | 5.9 | 20 | .7 | 4.4 | 150 | 0 | 31 |
| MAY | | | | | | | | | |
| 06... | 18 | 46 | 6.3 | 19 | .7 | 4.2 | 150 | 0 | 32 |
| 06... | 15 | 48 | 6.3 | 19 | .7 | 4.1 | 160 | 0 | 32 |
| AUG | | | | | | | | | |
| 20... | 25 | 41 | 6.3 | 22 | .8 | 5.0 | 120 | 4 | 36 |

| DATE | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | IRON, DIS-SOLVED (UG/L AS FE) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 10... | 22 | 3.1 | 207 | .07 | .95 | 1.0 | .040 | <10 | 6 |
| 10... | 23 | 3.1 | 209 | .07 | 1.5 | 1.6 | .030 | <10 | 9 |
| MAY | | | | | | | | | |
| 06... | 22 | .8 | 204 | .11 | .59 | .70 | .030 | 10 | <3 |
| 06... | 22 | 1.8 | 212 | .01 | 1.1 | 1.1 | .060 | 10 | 30 |
| AUG | | | | | | | | | |
| 20... | 28 | 3.0 | 204 | .00 | .82 | .82 | .060 | <10 | 2 |

## GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

### 325822097030401 GRAPEVINE LAKE SITE AC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| DATE | JAN 10,80 | MAY 6,80 | AUG 20,80 |
|---|---|---|---|
| TIME | 0846 | 1051 | 1016 |
| TOTAL CELLS/ML | 1100 | 1500 | 190000 |
| DIVERSITY: DIVISION | 1.7 | 1.3 | 0.0 |
| .CLASS | 1.7 | 1.3 | 0.0 |
| ..ORDER | 0.0 | 1.6 | 0.1 |
| ...FAMILY | 0.0 | 1.9 | 0.5 |
| ....GENUS | 0.0 | 1.9 | 1.3 |

| ORGANISM | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | 20 | 2 | 69 | 5 | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 250# | 23 | 110 | 7 | * | 0 |
| ....OOCYSTIS | * | 0 | -- | - | -- | - |
| ...SCENEDESMACEAE | | | | | | |
| ....SCENEDESMUS | -- | - | 55 | 4 | -- | - |
| ..TETRASPORALES | | | | | | |
| ...COCCOMYXACEAE | | | | | | |
| ....ELAKATOTHRIX | -- | - | 28 | 2 | * | 0 |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | 28 | 2 | * | 0 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 100 | 9 | 940# | 64 | * | 0 |
| ....MELOSIRA | 20 | 2 | -- | - | -- | - |
| ..PENNALES | | | | | | |
| ...ACHNANTHACEAE | | | | | | |
| ....ACHNANTHES | -- | - | -- | - | * | 0 |
| ...FRAGILARIACEAE | | | | | | |
| ....SYNEDRA | -- | - | -- | - | * | 0 |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 25 | 2 | -- | - | * | 0 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | 55 | 5 | -- | - | -- | - |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | 30 | 3 | -- | - | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | -- | - | -- | - | * | 0 |
| ....ANACYSTIS | -- | - | 190 | 13 | * | 0 |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENA | -- | - | 55 | 4 | 17000 | 9 |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | -- | - | 40000# | 21 |
| ....OSCILLATORIA | 480# | 45 | -- | - | 130000# | 68 |
| ....SCHIZOTHRIX | 70 | 7 | -- | - | -- | - |
| PYRRHOPHYTA (FIRE ALGAE) | | | | | | |
| .DINOPHYCEAE | | | | | | |
| ..PERIDINIALES | | | | | | |
| ...GLENODINIACEAE | | | | | | |
| ....GLENODINIUM | * | 0 | -- | - | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

### 330207097103701 GRAPEVINE LAKE SITE EC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| DATE | JAN 10,80 | MAY 6,80 | AUG 20,80 |
|---|---|---|---|
| TIME | 1116 | 1323 | 1314 |
| TOTAL CELLS/ML | 3700 | 1700 | 560000 |
| DIVERSITY: DIVISION | 1.4 | 1.8 | 0.1 |
| .CLASS | 1.4 | 1.8 | 0.1 |
| ..ORDER | 1.6 | 2.2 | 0.1 |
| ...FAMILY | 2.2 | 2.7 | 0.1 |
| ....GENUS | 2.3 | 2.9 | 0.5 |

| ORGANISM | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | 37 | 1 | -- | - | -- | - |
| ...COELASTRACEAE | | | | | | |
| ....COELASTRUM | 200 | 5 | 100 | 6 | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 650# | 17 | 320# | 19 | * | 0 |
| ....CHLORELLA | -- | - | 13 | 1 | -- | - |
| ....CHODATELLA | -- | - | 26 | 2 | -- | - |
| ....CLOSTERIOPSIS | -- | - | -- | - | * | 0 |
| ....OOCYSTIS | 24 | 1 | -- | - | * | 0 |
| ....TREUBARIA | -- | - | -- | - | * | 0 |
| ...SCENEDESMACEAE | | | | | | |
| ....CRUCIGENIA | 590# | 16 | -- | - | -- | - |
| ....SCENEDESMUS | -- | - | 51 | 3 | -- | - |
| ....TETRASTRUM | -- | - | 51 | 3 | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | 13 | 1 | -- | - |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 290 | 8 | 420# | 25 | -- | - |
| ....MELOSIRA | 85 | 2 | -- | - | -- | - |
| ..PENNALES | | | | | | |
| ...ACHNANTHACEAE | | | | | | |
| ....ACHNANTHES | * | 0 | 39 | 2 | * | 0 |
| ...FRAGILARIACEAE | | | | | | |
| ....SYNEDRA | * | 0 | -- | - | * | 0 |
| ...NAVICULACEAE | | | | | | |
| ....NAVICULA | -- | - | -- | - | * | 0 |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 110 | 3 | 51 | 3 | * | 0 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....ANACYSTIS | -- | - | 460# | 27 | * | 0 |
| ....COCCOCHLORIS | -- | - | 13 | 1 | -- | - |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENA | -- | - | 51 | 3 | 4600 | 1 |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | -- | - | 510000# | 91 |
| ....OSCILLATORIA | 1700# | 46 | -- | - | 43000 | 8 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....EUGLENA | -- | - | 39 | 2 | * | 0 |
| ....TRACHELOMONAS | -- | - | 39 | 2 | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 08055000 DENTON CREEK NEAR GRAPEVINE, TX

LOCATION.--Lat 32°59'13", long 97°00'45", Denton County, Hydrologic Unit 12030104, on left bank at downstream side of left pier of bridge on State Highway 121, 1.3 mi (2.1 km) downstream from Bakers Branch, 4.1 mi (6.6 km) downstream from Grapevine Dam, 5.0 mi (8.0 km) northeast of Grapevine, and o.1 mi (9.8 km) upstream from mouth.

DRAINAGE AREA.--705 mi$^2$ (1,826 km$^2$).

PERIOD OF RECORD.--October 1947 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 439.11 ft (133.841 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Grapevine Lake since July 1952 (see preceding page). Much of flow is used by the city of Dallas for municipal supply (see station 08055500). Records furnished by the Corps of Engineers indicate that 1,970 acre-ft (2.43 hm$^3$) was diverted during year from Denton Creek just downstream from Grapevine Dam. Several observations of water temperature were made during the year. Corps of Engineer gage-height telemeter (DARDC) located at station.

AVERAGE DISCHARGE.--5 years (water years 1948-52) prior to regulation, 140 ft$^3$/s (3.965 m$^3$/s), 101,400 acre-ft/yr (126 hm$^3$/yr); 28 years (water years 1953-80) regulated, unadjusted, 135 ft$^3$/s (3.823 m$^3$/s), 97,810 acre-ft/yr (121 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,900 ft$^3$/s (394 m$^3$/s) Feb. 26, 1948, gage height, 30.38 ft (9.260 m), from rating curve extended above 6,000 ft$^3$/s (170 m$^3$/s) on basis of conveyance-slope study; no flow at times. Maximum discharge since construction of Grapevine Dam in 1952, 6,430 ft$^3$/s (182 m$^3$/s) Sept. 21, 1964, gage height, 26.50 ft (8.077 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1908 was slightly higher than the flood in April 1942, which reached a stage of 35.9 ft (10.94 m), from floodmarks, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 187 ft$^3$/s (5.30 m$^3$/s) Jan. 22 at 0800 hours, gage height, 7.35 ft (2.240 m); minimum daily, 2.4 ft$^3$/s (0.068 m$^3$/s) Jan. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 73 | 69 | 84 | 77 | 75 | 53 | 17 | 37 | 16 | 89 | 62 | 105 |
| 2 | 73 | 69 | 82 | 77 | 76 | 54 | 16 | 41 | 21 | 80 | 60 | 104 |
| 3 | 74 | 69 | 82 | 76 | 76 | 36 | 16 | 37 | 34 | 80 | 60 | 104 |
| 4 | 80 | 70 | 81 | 76 | 76 | 13 | 15 | 37 | 33 | 75 | 60 | 104 |
| 5 | 80 | 70 | 81 | 77 | 78 | 13 | 16 | 38 | 34 | 65 | 61 | 104 |
| 6 | 77 | 71 | 82 | 78 | 78 | 14 | 16 | 35 | 33 | 65 | 60 | 103 |
| 7 | 76 | 71 | 81 | 78 | 79 | 14 | 15 | 34 | 30 | 64 | 59 | 106 |
| 8 | 77 | 73 | 81 | 46 | 68 | 14 | 13 | 36 | 29 | 65 | 86 | 105 |
| 9 | 81 | 74 | 81 | 2.4 | 50 | 14 | 14 | 35 | 37 | 63 | 114 | 106 |
| 10 | 84 | 74 | 80 | 21 | 50 | 13 | 15 | 33 | 37 | 63 | 116 | 105 |
| 11 | 82 | 74 | 81 | 77 | 49 | 15 | 14 | 32 | 37 | 62 | 116 | 103 |
| 12 | 81 | 74 | 85 | 78 | 50 | 15 | 15 | 31 | 38 | 61 | 113 | 101 |
| 13 | 83 | 73 | 81 | 78 | 50 | 15 | 23 | 31 | 39 | 59 | 113 | 102 |
| 14 | 84 | 75 | 81 | 78 | 50 | 14 | 18 | 25 | 40 | 58 | 115 | 101 |
| 15 | 85 | 75 | 78 | 79 | 51 | 14 | 17 | 18 | 39 | 62 | 115 | 100 |
| 16 | 64 | 76 | 77 | 78 | 51 | 14 | 16 | 8.3 | 41 | 64 | 115 | 100 |
| 17 | 65 | 77 | 78 | 78 | 51 | 13 | 15 | 8.0 | 41 | 62 | 114 | 101 |
| 18 | 66 | 79 | 77 | 78 | 52 | 13 | 14 | 15 | 43 | 62 | 112 | 101 |
| 19 | 67 | 81 | 77 | 79 | 52 | 13 | 14 | 15 | 44 | 60 | 111 | 101 |
| 20 | 67 | 84 | 76 | 79 | 50 | 13 | 13 | 15 | 34 | 59 | 110 | 100 |
| 21 | 69 | 85 | 82 | 84 | 51 | 14 | 12 | 16 | 24 | 60 | 109 | 101 |
| 22 | 72 | 86 | 82 | 113 | 51 | 13 | 11 | 16 | 40 | 59 | 109 | 102 |
| 23 | 80 | 85 | 96 | 76 | 52 | 14 | 11 | 15 | 38 | 59 | 105 | 101 |
| 24 | 80 | 85 | 81 | 73 | 52 | 14 | 13 | 15 | 39 | 59 | 100 | 101 |
| 25 | 80 | 85 | 80 | 73 | 52 | 14 | 17 | 16 | 37 | 57 | 101 | 100 |
| 26 | 81 | 84 | 79 | 72 | 53 | 14 | 29 | 16 | 38 | 57 | 100 | 104 |
| 27 | 83 | 85 | 79 | 73 | 53 | 17 | 49 | 21 | 37 | 59 | 101 | 89 |
| 28 | 83 | 85 | 79 | 73 | 52 | 21 | 39 | 23 | 41 | 62 | 102 | 89 |
| 29 | 83 | 85 | 79 | 74 | 53 | 25 | 38 | 22 | 55 | 62 | 101 | 65 |
| 30 | 86 | 84 | 78 | 73 | --- | 16 | 37 | 17 | 65 | 61 | 101 | 12 |
| 31 | 70 | --- | 77 | 74 | --- | 16 | --- | 18 | --- | 62 | 103 | --- |
| TOTAL | 2386 | 2327 | 2498 | 2248.4 | 1681 | 555 | 568 | 756.3 | 1114 | 1975 | 3004 | 2920 |
| MEAN | 77.0 | 77.6 | 80.6 | 72.5 | 58.0 | 17.9 | 18.9 | 24.4 | 37.1 | 63.7 | 96.9 | 97.3 |
| MAX | 86 | 86 | 96 | 113 | 79 | 54 | 49 | 41 | 65 | 89 | 116 | 106 |
| MIN | 64 | 69 | 76 | 2.4 | 49 | 13 | 11 | 8.0 | 16 | 57 | 59 | 12 |
| AC-FT | 4730 | 4620 | 4950 | 4460 | 3330 | 1100 | 1130 | 1500 | 2210 | 3920 | 5960 | 5790 |

CAL YR 1979 TOTAL 16928.3 MEAN 46.4 MAX 172 MIN 1.1 AC-FT 33580
WTR YR 1980 TOTAL 22032.7 MEAN 60.2 MAX 116 MIN 2.4 AC-FT 43700

## 08055500 ELM FORK TRINITY RIVER NEAR CARROLLTON, TX

**LOCATION.**--Lat 32°57'57", long 96°56'39", Dallas County, Hydrologic Unit 12030103, near left bank at downstream side of bridge on Sandy Lake Road, 40 ft (12 m) upstream from Carrollton Dam, 0.3 mi (0.5 km) downstream from Denton Creek, 1.0 mi (1.6 km) upstream from St. Louis Southwestern Railway Lines bridge, 2.3 mi (3.7 km) northwest of Carrollton, and 18.2 mi (29.3 km) upstream from mouth.

**DRAINAGE AREA.**--2,459 mi$^2$ (6,369 km$^2$).

**PERIOD OF RECORD.**--January 1907 to current year. Monthly discharge only for some periods, published in WSP 1312. Prior to November 1923, published as "near Dallas".

**REVISED RECORDS.**--WSP 788: 1924. WSP 1148: Drainage area at former site. WSP 1632: 1908(M). WSP 1922: Drainage area.

**GAGE.**--Water-stage recorder and concrete control. Datum of gage is 433.40 ft (132.100 m) National Geodetic Vertical Datum of 1929. Prior to November 1923, nonrecording gage at site 15.5 mi (24.9 km) downstream at different datum. Nov. 1, 1923, to Nov. 13, 1934, nonrecording gage, and Nov. 14, 1934, to July 6, 1938, water-stage recorder at present site and datum. July 7, 1938, to Apr. 14, 1939, nonrecording gage at site 9.3 mi (15.0 km) downstream at datum 22.94 ft (6.992 m) lower. Apr. 15, 1939, to Sept. 30, 1955, water-stage recorder at site 8.5 mi (13.7 km) downstream at datum 22.94 ft (6.992 m) lower.

**REMARKS.**--Records good. Flow is largely regulated by Lewisville Lake (station 08052800) since November 1954 and by Grapevine Lake (station 08054500) since July 1952. Records furnished by the city of Dallas show that during the year 124,670 acre-ft (154 hm$^3$) was diverted from pool at gage and 56,900 acre-ft (70.2 hm$^3$) was diverted from river channel 14 mi (23 km) downstream for municipal use. Also, 2,850 acre-ft (3.51 hm$^3$) was returned from a water treatment plant to the river below this station. Records furnished by the Dallas Power and Light Co. show that during the year 4,470 acre-ft (5.51 hm$^3$) was diverted from pool at gage into North Lake for cooling water at electric generating plant. National Weather Service and Corps of Engineers gage-height telemeters located at station. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--73 years (water years 1908-80), 760 ft$^3$/s (21.52 m$^3$/s), 550,600 acre-ft/yr (679 hm$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum gage height, about 17 ft (5.2 m) May 25, 1908, present site and datum, from information by local resident, estimated discharge, 145,000 ft$^3$/s (4,110 m$^3$/s), at site 8.5 mi (13.7 km) downstream (from information by Corps of Engineers); maximum gage height subsequent to 1908, 14.5 ft (4.42 m) Apr. 26, 1942, present site and datum, from observation by National Weather Service; discharge at site 8.5 mi (13.7 km) downstream, 90,700 ft$^3$/s (2,570 m$^3$/s); no flow at times.

Flood in 1866 reached about the same stage as flood of May 25, 1908.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 778 ft$^3$/s (22.0 m$^3$/s) Jan. 22 at 1100 hours, gage height, 2.26 ft (0.689 m); no flow for a few days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 62 | 41 | .08 | 18 | 20 | 125 | 7.0 | 37 | 68 | 133 | 149 | 83 |
| 2 | 58 | 27 | .00 | 12 | 39 | 60 | 18 | 63 | 62 | 127 | 165 | 158 |
| 3 | 65 | 10 | .00 | 42 | 51 | 31 | 23 | 10 | 18 | 129 | 168 | 210 |
| 4 | 50 | 3.5 | .00 | 110 | 115 | 12 | 34 | 34 | 101 | 172 | 164 | 124 |
| 5 | 88 | 63 | .00 | 110 | 167 | 28 | 79 | 34 | 59 | 181 | 115 | 109 |
| 6 | 61 | 36 | .00 | 76 | 160 | 61 | 68 | 40 | 44 | 174 | 88 | 120 |
| 7 | 50 | 4.5 | .28 | 48 | 157 | 45 | 24 | 64 | 104 | 141 | 142 | 87 |
| 8 | 48 | 13 | 1.9 | 87 | 174 | 54 | 31 | 11 | 131 | 143 | 176 | 148 |
| 9 | 111 | 21 | 2.1 | 93 | 151 | 29 | 51 | 38 | 99 | 158 | 109 | 52 |
| 10 | 100 | 9.7 | .02 | 122 | 127 | 36 | 49 | 17 | 29 | 133 | 174 | 38 |
| 11 | 5.3 | 11 | .70 | 76 | 133 | 108 | 150 | 29 | 19 | 138 | 123 | 23 |
| 12 | 65 | 12 | 18 | 120 | 117 | 61 | 24 | 66 | 91 | 170 | 154 | 69 |
| 13 | 114 | 1.7 | 27 | 118 | 107 | 24 | 76 | 35 | 105 | 160 | 153 | 112 |
| 14 | 45 | .05 | 11 | 104 | 115 | 16 | 64 | 35 | 139 | 139 | 177 | 113 |
| 15 | 71 | 26 | 16 | 104 | 141 | 56 | 25 | 77 | 80 | 124 | 155 | 132 |
| 16 | 161 | 20 | 22 | 84 | 137 | 82 | 34 | 19 | 94 | 142 | 76 | 148 |
| 17 | 93 | 6.7 | 23 | 92 | 141 | 16 | 98 | 3.3 | 115 | 150 | 107 | 124 |
| 18 | 35 | 12 | 93 | 125 | 123 | 44 | 63 | 2.0 | 107 | 156 | 141 | 101 |
| 19 | 19 | 14 | 129 | 150 | 114 | 69 | 74 | 20 | 103 | 169 | 129 | 114 |
| 20 | 32 | 6.6 | 88 | 109 | 95 | 77 | 65 | 33 | 129 | 178 | 151 | 111 |
| 21 | 97 | .01 | 37 | 108 | 71 | 34 | 98 | 39 | 47 | 181 | 242 | 117 |
| 22 | 81 | .00 | 48 | 409 | 69 | 63 | 121 | 98 | 70 | 117 | 172 | 150 |
| 23 | 98 | .00 | 170 | 63 | 75 | 94 | 98 | 46 | 66 | 137 | 156 | 112 |
| 24 | 32 | .00 | 75 | 13 | 90 | 34 | 114 | 38 | 61 | 144 | 190 | 73 |
| 25 | 2.7 | 5.1 | 19 | 26 | 110 | 36 | 64 | 40 | 54 | 166 | 199 | 113 |
| 26 | 17 | 1.4 | 4.2 | 43 | 112 | 29 | 24 | 33 | 123 | 157 | 162 | 47 |
| 27 | 65 | .00 | 31 | 44 | 94 | 30 | 58 | 39 | 125 | 116 | 151 | 74 |
| 28 | 76 | .00 | 53 | 44 | 90 | 49 | 49 | 84 | 136 | 103 | 186 | 28 |
| 29 | 70 | .00 | 67 | 45 | 97 | 52 | 40 | 12 | 153 | 120 | 89 | 369 |
| 30 | 183 | .25 | 60 | 26 | --- | 40 | 61 | 17 | 135 | 122 | 182 | 26 |
| 31 | 96 | --- | 22 | 22 | --- | 7.8 | --- | 77 | --- | 183 | 141 | --- |
| TOTAL | 2151.0 | 345.51 | 1018.28 | 2643 | 3192 | 1502.8 | 1784.0 | 1190.3 | 2667 | 4563 | 4686 | 3285 |
| MEAN | 69.4 | 11.5 | 32.8 | 85.3 | 110 | 48.5 | 59.5 | 38.4 | 88.9 | 147 | 151 | 110 |
| MAX | 183 | 63 | 170 | 409 | 174 | 125 | 150 | 98 | 153 | 183 | 242 | 369 |
| MIN | 2.7 | .00 | .00 | 12 | 20 | 7.8 | 7.0 | 2.0 | 18 | 103 | 76 | 23 |
| AC-FT | 4270 | 685 | 2020 | 5240 | 6330 | 2980 | 3540 | 2360 | 5290 | 9050 | 9290 | 6520 |

CAL YR 1979 TOTAL 103195.17 MEAN 283 MAX 4930 MIN .00 AC-FT 204700
WTR YR 1980 TOTAL 29027.89 MEAN 79.3 MAX 409 MIN .00 AC-FT 57580

## 08056500 TURTLE CREEK AT DALLAS, TX

LOCATION.--Lat 32°48'26", long 96°48'08", Dallas County, Hydrologic Unit 12030105, on left bank 60 ft (18 m) upstream from Hall Street Dam, 210 ft (64 m) upstream from Hall Street in Dallas, and 2.0 mi (3.2 km) north of Dallas County Courthouse.

DRAINAGE AREA.--7.98 mi² (20.67 km²).

PERIOD OF RECORD.--Water years 1948-51 (annual maximums only), October 1951 to September 1980 (discontinued). Daily discharge records for April 1948 to September 1951, published in WSP 1292, are unreliable and should not be used.

REVISED RECORDS.--See PERIOD OF RECORD.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 428.13 ft (130.494 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 17, 1951, at site 52 ft (16 m) upstream at same datum.

REMARKS.--Records good. Flow slightly affected by eight small channel dams above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--29 years, 8.17 ft³/s (0.231 m³/s), 13.90 in/yr (353 mm/yr), 5,920 acre-ft/yr (7.30 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,200 ft³/s (346 m³/s) Apr. 28, 1966, gage height, 10.54 ft (3.213 m), from rating curve extended above 2,460 ft³/s (69.7 m³/s) on basis of contracted-opening measurement of 12,200 ft³/s (346 m³/s); no flow at times during most years.
Maximum stage since at least 1903, that of Apr. 28, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,050 ft³/s (58.1 m³/s) Sept. 29 at 0330 hours, gage height, 5.47 ft (1.667 m), no other peak above base of 1,200 ft³/s (34.0 m³/s); minimum daily, 0.46 ft³/s (0.013 m³/s) Oct. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .62 | 1.0 | 1.2 | 1.2 | 3.1 | 3.4 | 2.2 | 13 | 1.1 | 1.0 | 1.9 | 1.3 |
| 2 | .60 | 1.2 | 1.2 | 1.3 | 3.5 | 2.2 | 2.2 | 16 | 1.2 | 1.4 | 1.8 | 1.3 |
| 3 | .68 | .98 | 1.2 | 1.9 | 3.3 | 4.5 | 2.2 | 1.9 | 1.1 | 1.0 | 1.8 | 1.2 |
| 4 | .62 | 1.4 | 1.0 | 1.2 | 3.7 | 6.2 | 1.4 | 1.6 | 1.0 | 2.2 | 1.7 | 1.2 |
| 5 | .52 | 1.3 | .89 | 1.0 | 4.0 | 2.2 | 1.5 | 2.0 | 1.2 | 2.0 | 1.7 | 1.1 |
| 6 | .52 | 1.1 | .97 | 1.2 | 2.9 | 1.9 | 2.0 | 6.2 | 1.6 | 2.0 | 1.8 | 1.1 |
| 7 | .60 | 1.5 | .74 | 1.4 | 11 | 2.3 | 2.0 | 4.9 | 1.1 | 1.8 | 1.9 | 1.1 |
| 8 | .70 | 2.2 | .70 | 1.1 | 39 | 2.3 | 1.6 | 10 | .96 | 1.3 | 1.8 | 2.3 |
| 9 | .83 | 6.4 | .98 | 1.3 | 16 | 2.0 | 1.0 | 3.5 | .91 | 1.2 | 1.8 | 11 |
| 10 | .56 | 1.1 | 1.4 | 2.1 | 12 | 4.2 | 1.2 | 1.8 | .97 | 1.3 | 1.8 | 2.9 |
| 11 | .70 | .82 | 1.2 | 1.9 | 7.0 | 6.2 | 1.3 | 1.6 | 1.2 | 1.5 | 1.8 | 1.7 |
| 12 | .73 | 2.2 | 69 | 1.3 | 5.6 | 3.6 | 7.6 | 8.0 | .95 | 1.7 | 2.0 | 1.1 |
| 13 | .69 | 1.2 | 3.1 | 1.4 | 5.0 | 2.2 | 72 | 2.9 | .88 | 2.0 | 2.7 | .86 |
| 14 | .71 | .74 | 1.3 | 1.4 | 4.6 | 2.3 | 7.0 | 12 | .90 | 2.0 | 2.2 | .84 |
| 15 | 25 | .70 | .88 | 1.4 | 4.6 | 2.8 | 2.0 | 172 | 1.0 | 2.1 | 2.2 | .83 |
| 16 | 3.2 | .78 | 1.0 | 1.0 | 8.0 | 3.3 | 1.9 | 10 | 1.2 | 2.2 | 2.0 | 1.0 |
| 17 | 1.0 | .71 | .76 | 1.6 | 4.5 | 3.2 | 1.8 | 4.5 | 1.5 | 2.1 | 1.8 | 1.2 |
| 18 | 1.0 | .76 | .92 | 1.5 | 4.1 | 1.8 | 1.6 | 3.8 | 1.3 | 2.2 | 1.7 | 1.5 |
| 19 | .96 | .76 | 1.1 | 11 | 3.0 | 2.3 | 1.5 | 3.7 | 1.1 | 2.0 | 1.6 | 1.1 |
| 20 | .85 | .83 | 1.1 | 14 | 3.5 | 2.0 | 1.3 | 3.7 | 62 | 3.3 | 1.3 | 1.1 |
| 21 | .73 | 6.9 | 46 | 70 | 3.6 | 1.0 | 1.0 | 5.5 | 3.3 | 2.9 | 1.3 | 1.8 |
| 22 | 16 | .80 | 9.0 | 110 | 3.2 | 2.2 | 1.1 | 2.8 | 8.2 | 2.6 | 2.6 | 1.8 |
| 23 | 3.0 | .67 | 117 | 8.5 | 2.5 | 6.0 | 1.4 | 2.7 | 3.0 | 2.1 | 1.4 | .88 |
| 24 | .91 | .61 | 5.3 | 5.7 | 3.0 | 3.9 | 20 | 2.6 | 2.0 | 2.1 | 1.4 | .88 |
| 25 | .65 | .57 | 4.0 | 5.0 | 3.0 | 2.1 | 12 | 2.1 | 1.5 | 3.1 | 1.1 | 16 |
| 26 | .46 | .50 | 2.6 | 3.0 | 2.6 | 2.6 | 2.0 | 2.0 | 1.6 | 1.0 | 1.3 | 27 |
| 27 | .49 | .80 | 2.1 | 3.1 | 3.0 | 29 | 1.4 | 1.8 | 1.4 | 2.3 | 2.0 | 83 |
| 28 | .50 | .83 | 2.0 | 6.1 | 3.0 | 20 | 1.1 | 1.6 | 1.2 | 2.3 | 2.2 | 56 |
| 29 | .76 | 1.0 | 2.1 | 12 | 3.5 | 7.3 | 1.0 | 1.6 | 1.1 | 2.1 | 1.7 | [illegible] |
| 30 | 88 | .90 | 1.5 | 4.9 | --- | 2.5 | 1.4 | 1.3 | 1.3 | 1.9 | 1.3 | 11 |
| 31 | 3.6 | --- | 1.1 | 3.7 | --- | 2.1 | --- | 1.2 | --- | 1.0 | 1.2 | --- |
| TOTAL | 154.05 | 41.16 | 231.36 | 297.0 | 195.8 | 144.8 | 167.1 | 313.1 | 108.57 | [illegible] | [illegible] | [illegible] |
| MEAN | 4.97 | 1.37 | 7.46 | 9.61 | 6.75 | 4.67 | 5.57 | 10.1 | 3.62 | [illegible] | [illegible] | [illegible] |
| MAX | 88 | 6.9 | 117 | 110 | 39 | 29 | 72 | 172 | 62 | [illegible] | [illegible] | [illegible] |
| MIN | .46 | .50 | .70 | 1.0 | 2.5 | 1.0 | 1.0 | 1.2 | .88 | [illegible] | [illegible] | .83 |
| CFSM | .62 | .17 | .94 | 1.20 | .85 | .59 | .70 | 1.27 | .45 | [illegible] | [illegible] | [illegible] |
| IN. | .72 | .19 | 1.08 | 1.39 | .91 | .67 | .78 | 1.46 | .51 | [illegible] | [illegible] | [illegible] |
| AC-FT | 306 | 82 | 459 | 589 | 388 | 287 | 331 | 621 | 215 | [illegible] | [illegible] | [illegible] |

CAL YR 1979 TOTAL 4212.17 MEAN 11.5 MAX 630 MIN .29 CFSM 1.44 IN 19.63 AC-FT 8350
WTR YR 1980 TOTAL 2276.25 MEAN 6.22 MAX 236 MIN .46 CFSM .78 IN 10.61 AC-FT 4510

## 08057000 TRINITY RIVER AT DALLAS, TX

**LOCATION.**--Lat 32°46'29", long 96°49'18", Dallas County, Hydrologic Unit 12030105, on right bank (levee) 90 ft (27 m) downstream from Commerce Street viaduct in Dallas, 5.2 mi (8.4 km) downstream from confluence of West and Elm Forks, and at mile 500.3 (805.0 km).

**DRAINAGE AREA.**--6,106 mi² (15,815 km²).

**PERIOD OF RECORD.**--October 1898 to December 1899 (gage heights only published in WSP 28 and 37), July 1903 to current year.

**REVISED RECORDS.**--WSP 810: 1903-6 (monthly and annual means). WSP 1732: 1937(M). WSP 1922: Drainage area. WRD TX-73-1: 1972.

**GAGE.**--Water-stage recorder. Datum of gage is 368.02 ft (112.172 m) National Geodetic Vertical Datum of 1929. Oct. 1, 1898, to Dec. 31, 1899, nonrecording gage at site 2 mi (3 km) upstream at different datum. July 1, 1903, to July 20, 1930, nonrecording gage at present site and datum. July 21, 1930, to Sept. 30, 1932, nonrecording gage at site 6 mi (10 km) downstream at datum 3.00 ft (0.914 m) lower.

**REMARKS.**--Records good. At times flow is affected by storage in seven upstream reservoirs, combined capacity 1,703,700 acre-ft (2.10 hm³), of which 846,200 acre-ft (1.04 hm³) is for flood control. During the year, the city of Dallas reported the diversion for municipal use of 181,500 acre-ft (224 hm³) from the Elm Fork, 42,570 acre-ft (52.5 hm³) from Lake Tawakoni (on Sabine River), the purchase of 11,690 acre-ft (14.4 hm³) from North Texas Municipal Water District (from the East Fork), and returned 164,300 acre-ft (203 hm³) of sewage effluent to the river 6 mi (10 km) downstream from station and 9,780 acre-ft (12.1 hm³) of sewage effluent to the river about 20 mi (32 km) downstream from station. The Trinity River Authority reported a discharge of 59,930 acre-ft (73.9 hm³) of sewage effluent into the river above the station. For other diversions and effluent returns above station, see stations 08048000, 08049200, and 08049500. City of Dallas gage-height telemeter located at station. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--77 years, 1,475 ft³/s (41.77 m³/s), 1,069,000 acre-ft/yr (1.32 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 184,000 ft³/s (5,210 m³/s) May 25, 1908, gage height, 52.6 ft (16.03 m), from rating curve extended above 100,000 ft³/s (2,800 m³/s); minimum observed (for periods 1903-6, 1920-79), 1.2 ft³/s (0.034 m³/s) July 6, 1953, result of storage behind temporary dam 6 mi (8 km) upstream. Maximum stage since at least 1842, that of May 25, 1908.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood in 1866 reached about the same stage.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 8,400 ft³/s (240 m³/s) Sept. 30 at 0415 hours, gage height, 30.79 ft (9.385 m); minimum daily, 186 ft³/s (5.27 m³/s) Jan. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | --- | [illegible] | [illegible] | --- | [illegible] | --- | [illegible] | --- | [illegible] | [illegible] | --- |
| TOTAL | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MEAN | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MAX | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MIN | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| AC-FT | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]

## 08057200 WHITE ROCK CREEK AT GREENVILLE AVENUE, DALLAS, TX

LOCATION.--Lat 32°53'21", long 96°45'23", Dallas County, Hydrologic Unit 12030105, on left bank 20 ft (6 m) downstream from bridge on Greenville Avenue in Dallas, 1.1 mi (1.8 km) downstream from Texas and New Orleans Railroad Co. bridge, 1.2 mi (1.9 km) downstream from Cottonwood Creek, 2.9 mi (4.7 km) upstream from White Rock Lake, and 8.2 mi (13.2 km) northeast of Dallas County Courthouse.

DRAINAGE AREA.--66.4 mi² (172.0 km²).

PERIOD OF RECORD.--August 1961 to September 1980 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 24, 1961, nonrecording gage at same site and datum.

REMARKS.--Records good. Some regulation at low flow by on- and off-channel dams from which many small diversions are made. The city of Dallas reported that the Royal Oaks Country Club, 0.1 mi (0.2 km) upstream, diverted 60.8 acre-ft (75,000 m³) during the water year; Lambert Landscape Co., 3.1 mi (5.0 km) upstream, diverted 23.2 acre-ft (28,600 m³); and Preston Trails Country Club, about 7.0 mi (11.3 km) upstream, diverted 130 acre-ft (160,000 m³). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years (water years 1962-80), 53.9 ft³/s (1.526 m³/s), 11.02 in/yr (280 mm/yr), 39,050 acre-ft/yr (48.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,100 ft³/s (1,080 m³/s) Sept. 21, 1964, elevation, 490.43 ft (149.483 m); minimum daily, 0.01 ft³/s (0.0003 m³/s) July 8, 1970, June 27, July 14, 1971.
Maximum elevation since at least 1886, that of Sept. 21, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,310 ft³/s (122 m³/s) Sept. 29 at 0445 hours, elevation, 485.34 ft (147.932 m), no other peak above base of 2,900 ft³/s (82.1 m³/s); minimum daily, 2.0 ft³/s (0.057 m³/s) Aug. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.2 | 30 | 6.3 | 9.8 | 17 | 16 | 16 | 16 | 5.1 | 5.3 | 2.7 | 2.0 |
| 2 | 3.6 | 8.6 | 6.7 | 10 | 16 | 15 | 15 | 46 | 4.7 | 4.3 | 3.0 | 2.5 |
| 3 | 3.6 | 7.0 | 7.2 | 11 | 16 | 15 | 15 | 13 | 4.6 | 3.9 | 3.3 | 2.8 |
| 4 | 3.6 | 6.3 | 5.9 | 10 | 15 | 14 | 13 | 11 | 4.1 | 4.1 | 4.2 | 2.8 |
| 5 | 3.1 | 5.6 | 6.0 | 10 | 15 | 16 | 14 | 10 | 4.8 | 3.9 | 3.6 | 3.9 |
| 6 | 3.7 | 6.9 | 7.1 | 10 | 16 | 16 | 16 | 10 | 4.3 | 5.3 | 4.0 | 3.5 |
| 7 | 3.8 | 6.6 | 6.7 | 9.6 | 23 | 16 | 16 | 11 | 4.1 | 5.3 | 4.3 | 4.8 |
| 8 | 3.5 | 6.4 | 5.6 | 9.0 | 169 | 16 | 13 | 28 | 6.0 | 4.8 | 3.2 | 4.6 |
| 9 | 3.6 | 28 | 5.8 | 8.8 | 60 | 13 | 12 | 12 | 5.7 | 4.3 | 2.0 | 13 |
| 10 | 3.8 | 12 | 6.1 | 9.2 | 44 | 14 | 12 | 10 | 4.4 | 4.1 | 2.3 | 6.2 |
| 11 | 3.5 | 8.0 | 5.4 | 11 | 30 | 14 | 13 | 9.2 | 4.6 | 4.0 | 2.8 | 3.5 |
| 12 | 4.5 | 7.2 | 180 | 11 | 27 | 20 | 22 | 10 | 4.1 | 3.9 | 2.7 | 3.2 |
| 13 | 3.8 | 6.6 | 22 | 10 | 26 | 13 | 228 | 11 | 4.1 | 3.8 | 2.8 | 3.0 |
| 14 | 3.8 | 5.7 | 10 | 9.0 | 23 | 12 | 31 | 16 | 4.6 | 3.8 | 2.7 | 3.6 |
| 15 | 42 | 5.1 | 8.5 | 10 | 22 | 12 | 22 | 609 | 4.4 | 3.7 | 2.9 | 3.0 |
| 16 | 13 | 5.8 | 7.7 | 12 | 27 | 13 | 20 | 56 | 3.7 | 3.7 | 2.9 | 2.9 |
| 17 | 6.6 | 6.0 | 7.6 | 9.5 | 22 | 13 | 19 | 19 | 3.7 | 3.6 | 2.9 | 2.8 |
| 18 | 6.2 | 6.3 | 7.1 | 8.6 | 21 | 11 | 17 | 13 | 3.2 | 3.6 | 2.6 | 2.9 |
| 19 | 6.1 | 6.6 | 7.3 | 12 | 20 | 11 | 16 | 11 | 3.6 | 3.8 | 2.6 | 3.2 |
| 20 | 5.9 | 6.3 | 7.6 | 57 | 20 | 11 | 15 | 11 | 66 | 12 | 3.2 | 3.6 |
| 21 | 5.7 | 21 | 21 | 250 | 19 | 12 | 16 | 12 | 12 | 8.5 | 2.1 | 3.7 |
| 22 | 28 | 6.2 | 25 | 503 | 19 | 12 | 15 | 9.2 | 22 | 6.6 | 2.9 | 3.5 |
| 23 | 6.7 | 5.6 | 418 | 30 | 19 | 20 | 13 | 7.6 | 11 | 5.6 | 2.6 | 3.6 |
| 24 | 5.8 | 4.7 | 30 | 25 | 17 | 15 | 167 | 7.3 | [illegible] | 6.3 | [illegible] | [illegible] |
| 25 | 5.9 | 4.9 | 17 | 21 | 16 | 10 | 150 | 7.3 | [illegible] | 4.3 | 3.3 | 230 |
| 26 | [illegible] | [illegible] | 13 | [illegible] | 13 | 10 | [illegible] | 8.1 | [illegible] | 4.7 | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | --- | [illegible] | [illegible] | --- | [illegible] | --- | [illegible] | --- | [illegible] | [illegible] | --- |
| TOTAL | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MEAN | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MAX | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MIN | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| CFSM | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| IN. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| AC-FT | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] CFSM [illegible] IN [illegible] AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] CFSM [illegible] IN [illegible] AC-FT [illegible]

## 08057410 TRINITY RIVER BELOW DALLAS, TX

LOCATION.--Lat 32°42'26", long 96°44'08", Dallas County, Hydrologic Unit 12030105, on right bank at downstream side of bridge on South Loop Highway 12, 1.0 mi (1.6 km) downstream from White Rock Creek, 1.5 mi (2.4 km) upstream from Fivemile Creek, 6.4 mi (10.3 km) southeast of Dallas County Courthouse in Dallas, and at mile 491.8 (791.3 km).

DRAINAGE AREA.--6,278 mi² (16,260 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1956 to September 1961 (monthly records only). October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 365.89 ft (111.523 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow is affected at times by eight upstream reservoirs with a combined capacity of 1,714,400 acre-ft (2.11 hm³), of which 846,200 acre-ft (1.04 hm³) is for flood control. Several cities within the Fort Worth-Dallas metroplex divert water for municipal use and return it to the river as sewage effluents above this station. Low flows are sustained by sewage effluents.

AVERAGE DISCHARGE.--23 years (water years 1958-80), 1,627 ft³/s (46.08 m³/s), 1,179,000 acre-ft/yr (1.45 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,700 ft³/s (1,860 m³/s) May 27, 1957, gage height, 32.02 ft (9.760 m); minimum daily, 131 ft³/s (3.71 m³/s) Dec. 9, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 25, 1908, reached a stage of 41.1 ft (12.53 m), from information by Corps of Engineers, and is the highest since that date. Floods in 1866 and 1908 reached about the same stage at Dallas.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,750 ft³/s (248 m³/s) Sept. 30 at 1700 hours, gage height, 23.11 ft (7.044 m); minimum daily, 398 ft³/s (11.3 m³/s) Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | --- | [illegible] | [illegible] | --- | [illegible] | --- | [illegible] | --- | [illegible] | [illegible] | --- |
| TOTAL | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MEAN | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MAX | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MIN | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| AC-FT | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]

## 08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year. Pesticide analyses: October 1971 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
pH: January 1977 to current year.
WATER TEMPERATURES: October 1967 to current year.
DISSOLVED OXYGEN: January 1977 to current year.

INSTRUMENTATION.--Water-quality monitor since Jan. 6. 1977.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (1967-68, 1972-80): Maximum, 1,130 micromhos Dec. 17, 1977; minimum, 164 micromhos Aug. 20, 1977.
pH: Maximum, 8.8 units Jan. 23, 1980; minimum, 6.9 units on many days during 1977 and 1979-80.
WATER TEMPERATURES (1967-68, 1973-79): Maximum, 34.0°C June 30, Aug. 31, 1977; minimum, 4.0°C Jan. 10, 1968.
DISSOLVED OXYGEN: Maximum, 11.4 mg/L Feb. 13, 1978; minimum, 0.0 mg/L on many days during spring and summer of 1977-80.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,030 micromhos Sept. 10; minimum, 172 micromhos Sept. 29.
pH: Maximum, 8.8 units Jan. 23; minimum, 6.9 units on many days during year.
WATER TEMPERATURES: Maximum, 32.5°C July 19, 20; minimum, 6.5°C Feb. 10, 11.
DISSOLVED OXYGEN: Maximum, 10.8 mg/L Jan. 30; minimum, 0.0 mg/L on several days during year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | 0930 | 534 | 805 | 7.2 | 21.0 | 30 | 12 | 2.2 | 26 | 6.1 | 130 | 0 |
| NOV 08... | 1223 | 538 | 820 | 7.3 | 17.5 | 70 | 10 | 4.5 | 47 | 8.7 | 140 | 0 |
| DEC 10... | 1130 | 479 | 882 | 7.2 | 15.5 | 20 | 6.2 | 4.0 | 40 | 19 | 150 | 0 |
| JAN 10... | 1240 | 620 | 924 | 7.4 | 13.5 | 30 | 3.5 | 5.6 | 54 | 14 | 150 | 0 |
| FEB 21... | 0945 | 580 | 820 | 7.3 | 15.0 | 30 | 18 | 6.6 | 66 | 13 | 180 | 0 |
| MAR 06... | 1510 | 581 | 690 | 7.6 | 16.0 | 30 | 16 | 7.9 | 81 | 18 | 170 | 0 |
| APR 08... | 1345 | 725 | 760 | 7.5 | 21.0 | 30 | 21 | 4.7 | 53 | 13 | 160 | 0 |
| MAY 21... | 1220 | 817 | 690 | 7.3 | 24.0 | 15 | 26 | 1.6 | 17 | 16 | 100 | 22 |
| JUN 09... | 1010 | 660 | 815 | 7.6 | 28.0 | 25 | 6.5 | 2.4 | 31 | 7.8 | 150 | 0 |
| JUL 16... | 1100 | 410 | 895 | 7.5 | 30.5 | 20 | 13 | 1.2 | 16 | 9.3 | 130 | 0 |
| AUG 27... | 1000 | 440 | 930 | 7.1 | 30.0 | 40 | 7.5 | 2.3 | 30 | 6.4 | 120 | 0 |
| SEP 16... | 0830 | 382 | 863 | 7.1 | 29.0 | 30 | 6.9 | 2.8 | 36 | 8.4 | 110 | 0 |

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

## 08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) | SOLIDS, VOLA-TILE, SUS-PENDED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | PHENOLS (UG/L) | METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 23... | 39 | 25 | .95 | .450 | 1.4 | 6.100 | 6.9 | 13 | 4.800 | 16 | 3 | .30 |
| NOV 08... | 13 | 8 | 1.7 | .400 | 2.1 | 7.400 | 7.6 | 15 | 3.400 | 13 | 1 | .20 |
| DEC 10... | 7 | 2 | 1.2 | 1.100 | 2.3 | 6.500 | 1.2 | 7.7 | .790 | 14 | 6 | .20 |
| JAN 10... | 28 | 26 | .74 | .760 | 1.5 | 9.000 | 5.0 | 14 | 4.700 | 21 | 9 | .30 |
| FEB 21... | 32 | 14 | .40 | .170 | .57 | 8.400 | 4.6 | 13 | 3.600 | 24 | 5 | .30 |
| MAR 04... | 20 | 19 | .99 | .310 | 1.3 | 9.900 | 6.1 | 16 | 5.200 | 24 | 7 | .40 |
| APR 08... | 47 | 16 | .97 | .230 | 1.2 | 8.900 | 1.1 | 10 | 3.200 | 19 | 4 | .30 |
| MAY 21... | 59 | 49 | 2.0 | .370 | 2.4 | 2.500 | 1.6 | 4.1 | 2.200 | 12 | 4 | .30 |
| JUN 05... | 2 | 10 | .36 | .330 | .69 | 6.000 | 4.0 | 10 | 3.900 | 17 | 5 | .40 |
| JUL 16... | 7 | 3 | 1.7 | .450 | 2.1 | 7.300 | 2.2 | 9.5 | 5.200 | 21 | 6 | .30 |
| AUG 27... | 9 | 0 | 2.6 | .750 | 3.3 | 7.200 | 4.8 | 12 | 6.000 | 16 | 4 | .20 |
| SEP 18... | 10 | 0 | 1.7 | .590 | 2.3 | 6.900 | 4.1 | 11 | 5.500 | 17 | 3 | .30 |

| DATE | TIME | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| JAN 10... | 1240 | 13 | 20 | 3 | 10 | 2 | 80 |
| MAR 04... | 1510 | 10 | 30 | 3 | 10 | 11 | 60 |
| JUL 16... | 1100 | 25 | 10 | <1 | 10 | 4 | 50 |
| SEP 18... | 0830 | 6 | 10 | 2 | 20 | 7 | 70 |

| DATE | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY DIS-SOLVED (UG/L AS HG) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| JAN 10... | 6 | 90 | .1 | 0 | 0 | 50 |
| MAR 04... | 7 | 80 | .0 | 0 | 0 | 40 |
| JUL 16... | 7 | 60 | .2 | 0 | 0 | 20 |
| SEP 18... | 3 | 60 | .2 | 0 | 0 | 40 |

| DATE | TIME | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN 10... | 1240 | .0 | 0 | .00 | .00 | .0 | .0 | 0 | .00 | .0 |
| JUL 16... | 1100 | .0 | [illegible] | .00 | .00 | .0 | .0 | [illegible] | .00 | [illegible] |

| DATE | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN 10... | .00 | .0 | .00 | .0 | .00 | .00 | .0 | .00 | .00 | .0 |
| JUL 16... | .00 | .0 | .00 | .0 | [illegible] | [illegible] | [illegible] | .00 | .00 | .0 |

## 08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | ETHION, TOTAL (UG/L) | HEPTA-CHLOR, TOTAL (UG/L) | HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | HEPTA-CHLOR EPOXIDE TOTAL (UG/L) | HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | MALA-THION, TOTAL (UG/L) | METH-OXY-CHLOR, TOTAL (UG/L) | METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN 10... | .00 | .00 | .0 | .00 | .0 | .05 | .2 | .14 | .01 | .0 |
| JUL 16... | .00 | .00 | .0 | .00 | .5 | .07 | .2 | .10 | .00 | .0 |

| DATE | METHYL PARA-THION, TOTAL (UG/L) | METHYL TRI-THION, TOTAL (UG/L) | MIREX, TOTAL (UG/L) | PARA-THION, TOTAL (UG/L) | TOX-APHENE, TOTAL (UG/L) | TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | TOTAL TRI-THION (UG/L) | 2,4-D, TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) | SILVEX, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN 10... | .00 | .00 | .00 | .00 | 0 | 0 | .00 | .61 | .35 | .00 |
| JUL 16... | .00 | .00 | .00 | .02 | 0 | <25 | .00 | -- | -- | -- |

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 19509 | 725 | 412 | 21800 | 57 | 3030 | 100 | 5300 | 160 |
| NOV. | 1979 | 17130 | 770 | 437 | 20200 | 62 | 2860 | 110 | 6020 | 170 |
| DEC. | 1979 | 26587 | 661 | 363 | 26100 | 48 | 3430 | 89 | 6360 | 160 |
| JAN. | 1980 | 30789 | 633 | 359 | 29800 | 47 | 3940 | 88 | 7270 | 160 |
| FEB. | 1980 | 25866 | 737 | 418 | 29200 | 58 | 4050 | 100 | 7120 | 170 |
| MAR. | 1980 | 20910 | 823 | 468 | 26400 | 69 | 3910 | 110 | 6420 | 170 |
| APR. | 1980 | 29400 | 661 | 375 | 29700 | 49 | 3890 | 91 | 7260 | 160 |
| MAY | 1980 | 45219 | 598 | 338 | 41300 | 42 | 5180 | 83 | 10100 | 160 |
| JUNE | 1980 | 18810 | 761 | 420 | 21300 | 58 | 2950 | 100 | 5100 | 170 |
| JULY | 1980 | 13673 | 835 | 475 | 17500 | 70 | 2540 | 120 | 4430 | 170 |
| AUG. | 1980 | 13606 | 853 | 481 | 17700 | 72 | 2650 | 120 | 4410 | 170 |
| SEPT | 1980 | 28256 | 517 | 287 | 21900 | 44 | 3360 | 80 | 6100 | 140 |
| TOTAL | | 289755 | -- | -- | 328900 | -- | 40800 | -- | 75900 | -- |
| WTD. AVG. | | 791 | 680 | 420 | -- | 52 | -- | 97 | -- | 163 |

## 08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 840 | 790 | 809 | 574 | 472 | 512 | 860 | 792 | 825 | 706 | 670 | 685 |
| 2 | 878 | 830 | 851 | 680 | 584 | 623 | 828 | 784 | 806 | 768 | 694 | 720 |
| 3 | 924 | 886 | 905 | 722 | 678 | 702 | 858 | 780 | 816 | 806 | 766 | 785 |
| 4 | 946 | 910 | 924 | 740 | 718 | 728 | 870 | 816 | 842 | 838 | 806 | 821 |
| 5 | 954 | 868 | 911 | 794 | 740 | 768 | 898 | 778 | 843 | 854 | 826 | 841 |
| 6 | 920 | 874 | 897 | 836 | 784 | 809 | 860 | 788 | 815 | 868 | 824 | 846 |
| 7 | 902 | 832 | 867 | 844 | 804 | 819 | 852 | 816 | 833 | 882 | 820 | 844 |
| 8 | 866 | 818 | 840 | 822 | 780 | 803 | 896 | 838 | 861 | 900 | 864 | 875 |
| 9 | 892 | 836 | 872 | 808 | 714 | 771 | 868 | 802 | 837 | 920 | 874 | 893 |
| 10 | 910 | 844 | 879 | 790 | 758 | 775 | 858 | 786 | 819 | 932 | 876 | 901 |
| 11 | 874 | 832 | 836 | 798 | 752 | 771 | 874 | 820 | 840 | 938 | 884 | 907 |
| 12 | 892 | 832 | 836 | 780 | 752 | 769 | 900 | 522 | 766 | 964 | 906 | 932 |
| 13 | 896 | 832 | 865 | 824 | 784 | 805 | 628 | 436 | 536 | 938 | 870 | 905 |
| 14 | 872 | 830 | 848 | 862 | 810 | 833 | 596 | 476 | 535 | 930 | 868 | 887 |
| 15 | 920 | 836 | 869 | 834 | 802 | 826 | 662 | 596 | 629 | 952 | 878 | 912 |
| 16 | 852 | 420 | 630 | 848 | 818 | 835 | 724 | 664 | 687 | 968 | 884 | 919 |
| 17 | 602 | 454 | 531 | 860 | 808 | 831 | 738 | 708 | 723 | 940 | 866 | 901 |
| 18 | 708 | 602 | 647 | 844 | 770 | 811 | 810 | 740 | 780 | 976 | 886 | 905 |
| 19 | 770 | 710 | 733 | 870 | 776 | 811 | 846 | 816 | 828 | 1010 | 908 | 928 |
| 20 | 800 | 776 | 792 | 868 | 810 | 832 | 876 | 842 | 857 | 956 | 788 | 871 |
| 21 | 832 | 796 | 815 | 880 | 706 | 808 | 886 | 838 | 863 | 900 | 468 | 674 |
| 22 | 832 | 536 | 712 | 822 | 770 | 801 | 872 | 654 | 736 | 648 | 378 | 449 |
| 23 | 808 | 756 | 787 | 814 | 764 | 788 | 772 | 342 | 560 | 684 | 364 | 423 |
| 24 | 828 | 786 | 807 | 842 | 794 | 818 | 658 | 364 | 480 | 598 | 472 | 511 |
| 25 | 822 | 766 | 786 | 842 | 760 | 806 | 516 | 436 | 468 | 664 | 598 | 627 |
| 26 | 776 | 750 | 761 | 788 | 744 | 768 | 612 | 514 | 569 | 716 | 654 | 686 |
| 27 | 802 | 770 | 788 | 800 | 764 | 781 | 664 | 614 | 634 | 720 | 700 | 709 |
| 28 | 790 | 746 | 772 | 838 | 788 | 814 | 728 | 666 | 689 | 750 | 706 | 718 |
| 29 | 788 | 726 | 759 | 832 | 800 | 825 | 806 | 728 | 760 | 748 | 680 | 713 |
| 30 | 828 | 340 | 653 | 838 | 804 | 818 | 810 | 716 | 772 | 806 | 578 | 714 |
| 31 | 578 | 310 | 448 | --- | --- | --- | 774 | 636 | 671 | 796 | 630 | 741 |
| MONTH | 954 | 310 | 790 | 880 | 472 | 782 | 900 | 342 | 720 | 1010 | 364 | 782 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| MONTH | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 754 | 692 | 726 | 860 | 820 | 839 | 954 | 860 | 900 | 820 | 730 | 772 |
| 2 | 716 | 678 | 700 | 836 | 798 | 814 | 910 | 862 | 882 | 798 | 726 | 769 |
| 3 | 736 | 702 | 720 | 818 | 778 | 796 | 908 | 838 | 871 | 868 | 800 | 834 |
| 4 | 740 | 718 | 728 | 816 | 784 | 795 | 870 | 798 | 843 | 884 | 854 | 869 |
| 5 | 760 | 740 | 750 | 820 | 738 | 777 | 868 | 780 | 824 | 884 | 838 | 862 |
| 6 | 784 | 746 | 759 | 788 | 732 | 760 | 900 | 830 | 866 | 846 | 818 | 836 |
| 7 | 802 | 776 | 787 | 808 | 740 | 776 | 894 | 856 | 873 | 842 | 790 | 821 |
| 8 | 814 | 706 | 766 | 840 | 786 | 808 | 916 | 886 | 898 | 914 | 702 | 819 |
| 9 | 770 | 730 | 754 | 836 | 798 | 809 | 908 | 864 | 885 | 1020 | 688 | 807 |
| 10 | 796 | 766 | 780 | 820 | 788 | 801 | 914 | 844 | 868 | 1030 | 896 | 958 |
| 11 | 796 | 768 | 784 | 842 | 794 | 815 | 882 | 816 | 850 | 916 | 760 | 815 |
| 12 | 810 | 768 | 793 | 876 | 828 | 846 | 884 | 848 | 864 | 874 | 812 | 844 |
| 13 | 800 | 764 | 786 | 874 | 820 | 841 | 896 | 838 | 865 | 898 | 850 | 878 |
| 14 | 826 | 780 | 807 | 870 | 794 | 828 | 844 | 810 | 828 | 926 | 846 | 875 |
| 15 | 820 | 750 | 791 | 872 | 820 | 836 | 840 | 812 | 825 | 912 | 850 | 881 |
| 16 | 792 | 752 | 769 | 864 | 816 | 837 | 874 | 834 | 851 | 938 | 884 | 909 |
| 17 | 782 | 740 | 761 | 890 | 846 | 860 | 854 | 810 | 829 | 936 | 888 | 907 |
| 18 | 790 | 742 | 759 | 868 | 824 | 848 | 848 | 768 | 809 | 918 | 888 | 903 |
| 19 | 810 | 778 | 792 | 912 | 852 | 873 | 840 | 802 | 821 | 926 | 882 | 896 |
| 20 | 844 | 368 | 683 | 944 | 812 | 858 | 842 | 814 | 824 | 950 | 888 | 913 |
| 21 | 608 | 438 | 525 | 902 | 804 | 838 | 850 | 818 | 835 | 946 | 848 | 895 |
| 22 | 680 | 564 | 632 | 872 | 794 | 839 | 876 | 840 | 856 | 898 | 804 | 856 |
| 23 | 712 | 608 | 666 | 890 | 836 | 857 | 906 | 850 | 878 | 922 | 868 | 890 |
| 24 | 760 | 686 | 722 | 896 | 856 | 868 | 886 | 806 | 854 | 918 | 860 | 889 |
| 25 | 816 | 766 | 794 | 904 | 862 | 881 | 840 | 788 | 813 | 896 | 838 | 867 |
| 26 | 814 | 784 | 806 | 916 | 868 | 892 | 884 | 828 | 859 | 1010 | 688 | 801 |
| 27 | 878 | 804 | 836 | 882 | 832 | 856 | 922 | 862 | 888 | 852 | 488 | 634 |
| 28 | 894 | 862 | 877 | 902 | 738 | 838 | 902 | 798 | 853 | 798 | 310 | 379 |
| 29 | 890 | 804 | 850 | 864 | 780 | 838 | 868 | 822 | 844 | 528 | 172 | 308 |
| 30 | 840 | 802 | 823 | 906 | 852 | 879 | 896 | 846 | 872 | 320 | 282 | 296 |
| 31 | --- | --- | --- | 924 | 856 | 882 | 884 | 762 | 825 | --- | --- | --- |
| MONTH | 894 | 368 | 737 | 944 | 732 | 833 | 954 | 762 | 853 | 1030 | 172 | 807 |

PH (STANDARD UNITS), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 7.1 | 7.0 | 7.1 | 7.0 | 7.0 | 7.0 | 7.0 | 6.9 | 7.0 | 7.0 | 7.0 | 7.0 |
| 2 | 7.1 | 7.0 | 7.1 | 7.1 | 7.0 | 7.0 | 7.0 | 6.9 | 7.0 | 7.4 | 7.0 | 7.1 |
| 3 | 7.1 | 7.1 | 7.1 | 7.0 | 7.0 | 7.0 | 7.0 | 6.9 | 7.0 | 7.5 | 7.2 | 7.4 |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | 7.1 | 7.0 | 7.1 | 7.1 | 7.0 | 7.0 | 7.0 | 6.9 | 7.0 | [illegible] | [illegible] | [illegible] |
| 7 | 7.1 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.1 | 6.9 | 7.0 | [illegible] | [illegible] | [illegible] |
| 8 | 7.1 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | 7.0 | 7.0 | 7.0 | 7.1 | 7.0 | 7.0 | 7.1 | 7.0 | 7.0 | [illegible] | [illegible] | [illegible] |
| 12 | 7.1 | 6.9 | 7.0 | 7.0 | 7.0 | 7.0 | 7.1 | 6.9 | 7.0 | [illegible] | [illegible] | [illegible] |
| 13 | 7.1 | 7.0 | 7.0 | 7.1 | 7.0 | 7.0 | 7.0 | 6.9 | 6.9 | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MONTH | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

## PH (STANDARD UNITS), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 7.5 | 7.4 | 7.5 | 7.5 | 7.4 | 7.4 | 7.5 | 7.3 | 7.4 | 7.3 | 7.2 | 7.3 |
| 2 | 7.5 | 7.4 | 7.4 | 7.5 | 7.4 | 7.4 | 7.4 | 7.3 | 7.4 | 7.3 | 7.2 | 7.2 |
| 3 | 7.5 | 7.4 | 7.4 | 7.5 | 7.4 | 7.5 | 7.7 | 7.3 | 7.4 | 7.3 | 7.1 | 7.2 |
| 4 | 7.5 | 7.4 | 7.4 | 7.5 | 7.4 | 7.4 | 7.4 | 7.3 | 7.4 | 7.2 | 7.1 | 7.2 |
| 5 | 7.5 | 7.4 | 7.4 | 7.4 | 7.2 | 7.4 | 7.4 | 7.3 | 7.3 | 7.2 | 7.2 | 7.2 |
| 6 | 7.4 | 7.4 | 7.4 | 7.4 | 7.3 | 7.4 | 7.5 | 7.3 | 7.4 | 7.3 | 7.2 | 7.2 |
| 7 | 7.5 | 7.4 | 7.4 | 7.5 | 7.4 | 7.4 | 7.5 | 7.4 | 7.4 | 7.3 | 7.2 | 7.2 |
| 8 | 7.7 | 7.4 | 7.5 | 7.5 | 7.4 | 7.4 | 7.5 | 7.3 | 7.5 | 7.3 | 7.2 | 7.3 |
| 9 | 7.7 | 7.5 | 7.6 | 7.4 | 7.2 | 7.4 | 7.4 | 7.3 | 7.4 | 7.3 | 7.1 | 7.2 |
| 10 | 7.5 | 7.5 | 7.5 | 7.4 | 7.2 | 7.4 | 7.4 | 7.3 | 7.4 | 7.3 | 7.1 | 7.2 |
| 11 | 7.8 | 7.5 | 7.6 | 7.4 | 7.3 | 7.3 | 7.4 | 7.3 | 7.4 | 7.3 | 7.2 | 7.2 |
| 12 | 7.7 | 7.5 | 7.6 | 7.4 | 7.3 | 7.3 | 7.4 | 7.4 | 7.4 | 7.3 | 7.2 | 7.2 |
| 13 | 7.6 | 7.4 | 7.5 | 7.4 | 7.3 | 7.3 | 7.5 | 7.4 | 7.4 | 7.3 | 7.2 | 7.2 |
| 14 | 7.5 | 7.3 | 7.4 | 7.4 | 7.3 | 7.3 | 7.5 | 7.4 | 7.5 | 7.2 | 7.1 | 7.2 |
| 15 | 7.5 | 7.3 | 7.4 | 7.4 | 7.2 | 7.3 | --- | --- | --- | 7.3 | 7.1 | 7.2 |
| 16 | 7.5 | 7.4 | 7.4 | 7.4 | 7.3 | 7.3 | --- | --- | --- | 7.4 | 7.2 | 7.3 |
| 17 | 7.5 | 7.4 | 7.5 | 7.4 | 7.3 | 7.4 | 7.4 | 7.4 | 7.4 | 7.4 | 7.3 | 7.4 |
| 18 | 7.5 | 7.4 | 7.4 | 7.4 | 7.3 | 7.4 | 7.4 | 7.3 | 7.4 | 7.3 | 7.0 | 7.1 |
| 19 | 7.5 | 7.3 | 7.4 | 7.5 | 7.3 | 7.4 | 7.4 | 7.3 | 7.4 | 7.1 | 7.0 | 7.1 |
| 20 | 7.4 | 7.3 | 7.3 | 7.4 | 7.3 | 7.4 | 7.4 | 7.3 | 7.4 | 7.3 | 7.1 | 7.2 |
| 21 | 7.3 | 7.3 | 7.3 | 7.4 | 7.3 | 7.3 | 7.5 | 7.3 | 7.4 | 7.3 | 7.1 | 7.2 |
| 22 | 7.4 | 7.2 | 7.3 | 7.4 | 7.3 | 7.3 | 7.4 | 7.3 | 7.3 | 7.4 | 7.2 | 7.2 |
| 23 | 7.3 | 7.2 | 7.3 | 7.4 | 7.3 | 7.3 | 7.4 | 7.2 | 7.3 | 7.3 | 7.2 | 7.3 |
| 24 | 7.3 | 7.2 | 7.3 | 7.4 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 | 7.2 | 7.3 |
| 25 | 7.3 | 7.3 | 7.3 | 7.5 | 7.3 | 7.4 | 7.4 | 7.2 | 7.3 | 7.3 | 7.2 | 7.3 |
| 26 | 7.5 | 7.3 | 7.4 | 7.5 | 7.4 | 7.4 | 7.3 | 7.2 | 7.3 | 7.3 | 7.2 | 7.2 |
| 27 | 7.5 | 7.4 | 7.5 | 7.7 | 7.4 | 7.5 | 7.3 | 7.2 | 7.3 | 7.3 | 7.2 | 7.2 |
| 28 | 7.5 | 7.4 | 7.5 | 7.5 | 7.3 | 7.4 | 7.3 | 7.2 | 7.3 | 7.4 | 7.2 | 7.3 |
| 29 | 7.5 | 7.4 | 7.4 | 7.5 | 7.3 | 7.4 | 7.3 | 7.2 | 7.2 | 7.3 | 7.3 | 7.3 |
| 30 | --- | --- | --- | 7.6 | 7.4 | 7.5 | 7.3 | 7.2 | 7.2 | 7.3 | 7.3 | 7.3 |
| 31 | --- | --- | --- | 7.5 | 7.4 | 7.4 | --- | --- | --- | 7.3 | 7.3 | 7.3 |
| MONTH | 7.8 | 7.2 | 7.4 | 7.7 | 7.2 | 7.4 | 7.7 | 7.2 | 7.4 | 7.4 | 7.0 | 7.2 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MONTH | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

## 08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 28.0 | 26.5 | 27.0 | 19.0 | 17.5 | 18.5 | 15.0 | 13.5 | 14.5 | 14.0 | 12.5 | 13.5 |
| 2 | 27.5 | 26.0 | 26.5 | 19.5 | 17.5 | 19.0 | 15.0 | 14.0 | 14.5 | 15.5 | 12.5 | 14.0 |
| 3 | 26.5 | 25.0 | 26.0 | 20.0 | 18.0 | 19.5 | 15.5 | 14.0 | 15.0 | 15.5 | 14.0 | 14.5 |
| 4 | 25.5 | 24.0 | 25.0 | 19.5 | 18.5 | 19.0 | 16.5 | 14.5 | 15.5 | 14.0 | 12.5 | 13.5 |
| 5 | 25.0 | 23.0 | 24.0 | 19.5 | 18.5 | 19.0 | 17.5 | 15.5 | 16.0 | 14.5 | 12.5 | 13.5 |
| 6 | 25.0 | 23.5 | 24.5 | 20.0 | 18.5 | 19.5 | 17.0 | 15.5 | 16.0 | 15.0 | 13.5 | 14.0 |
| 7 | 25.5 | 24.0 | 24.5 | 19.0 | 18.0 | 18.5 | 17.0 | 15.0 | 16.0 | 15.5 | 13.5 | 14.0 |
| 8 | 26.0 | 24.5 | 25.0 | 19.5 | 18.0 | 19.0 | 16.5 | 15.0 | 16.0 | 14.0 | 12.0 | 13.5 |
| 9 | 26.0 | 24.0 | 25.0 | 20.0 | 19.0 | 19.5 | 16.0 | 14.5 | 15.5 | 14.5 | 12.5 | 14.0 |
| 10 | 24.0 | 22.0 | 23.0 | 19.0 | 17.0 | 18.0 | 17.0 | 15.5 | 16.5 | 15.0 | 14.0 | 14.5 |
| 11 | 24.0 | 22.0 | 23.0 | 18.0 | 16.5 | 17.0 | 19.0 | 17.0 | 18.0 | 16.0 | 14.5 | 15.5 |
| 12 | 25.0 | 23.0 | 24.0 | 17.5 | 16.0 | 17.0 | 18.0 | 10.5 | 14.5 | 15.0 | 13.5 | 14.5 |
| 13 | 25.0 | 24.0 | 24.5 | 17.5 | 15.5 | 17.0 | 11.5 | 9.0 | 10.0 | 15.0 | 13.0 | 14.5 |
| 14 | 24.0 | 23.0 | 23.5 | 18.0 | 16.0 | 17.0 | 12.5 | 9.5 | 11.0 | 16.0 | 14.0 | 15.5 |
| 15 | 23.0 | 22.5 | 23.0 | 18.5 | 16.5 | 17.5 | 14.0 | 11.0 | 12.5 | 17.5 | 16.0 | 17.0 |
| 16 | 23.0 | 21.0 | 22.0 | 18.5 | 16.5 | 17.5 | 14.0 | 12.0 | 13.0 | 18.5 | 17.0 | 18.0 |
| 17 | 23.0 | 21.0 | 22.0 | 19.0 | 16.5 | 18.0 | 12.5 | 10.0 | 11.0 | 18.0 | 16.5 | 17.5 |
| 18 | 24.5 | 23.0 | 24.0 | 20.0 | 18.5 | 19.0 | 12.5 | 10.0 | 11.5 | 17.5 | 16.0 | 17.0 |
| 19 | 25.0 | 24.0 | 24.5 | 21.0 | 19.5 | 20.0 | 14.5 | 11.5 | 13.0 | 17.5 | 16.5 | 17.0 |
| 20 | 25.5 | 24.5 | 25.0 | 21.5 | 20.5 | 21.0 | 16.0 | 14.0 | 15.0 | 17.5 | 16.0 | 16.5 |
| 21 | 26.0 | 25.0 | 25.5 | 21.5 | 19.5 | 20.5 | 17.5 | 15.5 | 16.5 | 16.5 | 12.0 | 14.0 |
| 22 | 23.5 | 22.0 | 23.0 | 19.5 | 16.0 | 17.5 | 18.0 | 16.0 | 17.0 | 12.5 | 10.0 | 11.0 |
| 23 | 22.5 | 21.0 | 22.0 | 17.0 | 15.5 | 16.0 | 17.5 | 12.5 | 15.0 | 10.0 | 8.5 | 9.5 |
| 24 | 22.5 | 21.0 | 22.0 | 17.0 | 16.0 | 16.5 | 12.5 | 11.5 | 12.0 | 11.5 | 9.5 | 10.5 |
| 25 | 22.5 | 21.0 | 22.0 | 17.5 | 16.5 | 17.0 | 13.0 | 11.5 | 12.0 | 13.5 | 11.5 | 12.5 |
| 26 | 22.5 | 21.0 | 22.0 | 18.0 | 16.5 | 17.0 | 14.5 | 12.0 | 13.0 | 13.5 | 12.0 | 13.0 |
| 27 | 23.0 | 21.5 | 22.5 | 18.5 | 17.0 | 17.5 | 16.0 | 14.0 | 15.0 | 13.0 | 11.0 | 12.0 |
| 28 | 23.5 | 22.5 | 23.0 | 18.0 | 16.0 | 17.0 | 16.0 | 15.0 | 16.0 | 12.0 | 10.5 | 11.5 |
| 29 | 23.5 | 22.5 | 23.0 | 16.0 | 14.5 | 15.0 | 16.0 | 15.0 | 15.5 | 11.5 | 9.0 | 10.5 |
| 30 | 23.5 | 19.0 | 21.5 | 15.0 | 13.5 | 14.5 | 15.0 | 13.5 | 14.0 | 11.0 | 7.0 | 9.5 |
| 31 | 19.5 | 18.0 | 18.5 | --- | --- | --- | 13.5 | 12.0 | 13.0 | 10.5 | 8.0 | 9.0 |
| MONTH | 28.0 | 18.0 | 23.5 | 21.5 | 13.5 | 18.0 | 19.0 | 9.0 | 14.5 | 18.5 | 7.0 | 13.5 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| MONTH | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

## 08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 28.0 | 27.5 | 27.5 | 32.0 | 30.5 | 31.0 | 31.5 | 30.5 | 31.0 | 30.5 | 29.5 | 29.5 |
| 2 | 28.0 | 27.0 | 27.5 | 32.0 | 31.0 | 31.0 | 31.5 | 30.5 | 30.5 | 31.0 | 29.5 | 30.0 |
| 3 | 28.0 | 27.5 | 27.5 | 32.0 | 31.0 | 31.0 | 31.0 | 30.0 | 30.5 | 31.0 | 30.0 | 30.5 |
| 4 | 28.5 | 27.5 | 28.0 | 32.0 | 31.0 | 31.5 | 30.0 | 29.5 | 30.0 | 31.0 | 30.5 | 30.5 |
| 5 | 29.0 | 28.0 | 28.5 | 32.0 | 30.5 | 31.0 | 30.5 | 29.0 | 29.5 | 31.5 | 30.5 | 30.5 |
| 6 | 29.0 | 28.5 | 28.5 | 32.0 | 30.5 | 31.0 | 31.0 | 30.0 | 30.5 | 30.5 | 30.0 | 30.0 |
| 7 | 29.5 | 28.5 | 29.0 | 31.5 | 30.5 | 31.0 | 31.5 | 30.5 | 31.0 | 30.5 | 29.5 | 30.0 |
| 8 | 29.0 | 28.0 | 29.0 | 32.0 | 31.0 | 31.5 | 32.0 | 30.5 | 31.0 | 30.0 | 28.5 | 29.5 |
| 9 | 28.0 | 27.0 | 27.5 | 32.0 | 31.0 | 31.5 | 32.0 | 31.0 | 31.0 | 30.0 | 28.5 | 29.0 |
| 10 | 28.0 | 27.0 | 27.5 | 32.0 | 31.0 | 31.5 | 31.5 | 30.5 | 31.0 | 30.0 | 29.0 | 29.5 |
| 11 | 29.0 | 27.5 | 28.0 | 32.0 | 31.0 | 31.5 | 30.5 | 30.0 | 30.5 | 30.5 | 29.0 | 30.0 |
| 12 | 29.0 | 28.0 | 28.5 | 32.0 | 31.0 | 31.5 | 31.0 | 30.0 | 30.5 | 30.5 | 29.0 | 30.0 |
| 13 | 29.0 | 28.0 | 28.5 | 32.0 | 31.0 | 31.5 | 31.5 | 30.5 | 31.0 | 30.0 | 29.0 | 29.5 |
| 14 | 28.5 | 27.5 | 28.0 | 32.0 | 30.5 | 31.0 | 31.5 | 30.5 | 30.5 | 30.0 | 29.0 | 29.5 |
| 15 | 29.0 | 28.0 | 28.5 | 32.0 | 31.0 | 31.5 | 31.0 | 30.0 | 30.5 | 30.5 | 29.5 | 30.0 |
| 16 | 29.0 | 28.5 | 29.0 | 32.0 | 31.0 | 31.5 | 31.0 | 30.0 | 30.5 | 31.0 | 30.0 | 30.0 |
| 17 | 29.5 | 29.0 | 29.0 | 32.0 | 31.0 | 31.0 | 31.0 | 30.0 | 30.5 | 30.5 | 29.5 | 30.0 |
| 18 | 30.0 | 29.0 | 29.5 | 32.0 | 31.0 | 31.5 | 31.0 | 30.0 | 30.5 | 30.5 | 29.5 | 30.0 |
| 19 | 31.0 | 29.5 | 30.0 | 32.5 | 31.0 | 31.5 | 31.0 | 30.0 | 30.5 | 30.0 | 29.0 | 29.5 |
| 20 | 30.5 | 25.5 | 28.5 | 32.5 | 31.0 | 31.5 | 31.5 | 30.0 | 30.5 | 30.0 | 29.0 | 29.5 |
| 21 | 29.5 | 27.0 | 28.5 | 31.5 | 31.0 | 31.0 | 31.5 | 30.0 | 31.0 | 30.0 | 29.0 | 29.5 |
| 22 | 29.5 | 28.5 | 29.0 | 31.5 | 30.5 | 31.0 | 32.0 | 31.0 | 31.5 | 30.0 | 28.5 | 29.0 |
| 23 | 30.5 | 28.5 | 29.5 | 31.5 | 30.5 | 31.0 | 32.0 | 31.0 | 31.5 | 29.5 | 29.0 | 29.5 |
| 24 | 31.0 | 30.0 | 30.5 | 31.5 | 30.0 | 30.5 | 32.0 | 31.0 | 31.5 | 29.5 | 28.5 | 29.0 |
| 25 | 31.5 | 30.5 | 31.0 | 31.5 | 30.5 | 31.0 | 31.0 | 30.0 | 30.5 | 29.0 | 28.5 | 29.0 |
| 26 | 32.0 | 30.5 | 31.0 | 32.0 | 31.0 | 31.0 | 31.5 | 30.0 | 30.5 | 28.5 | 27.0 | 27.5 |
| 27 | 32.0 | 31.0 | 31.5 | 32.0 | 30.5 | 31.0 | 31.5 | 30.5 | 31.0 | 27.0 | 23.0 | 24.5 |
| 28 | 32.0 | 31.0 | 31.5 | 31.0 | 29.5 | 30.5 | 30.5 | 29.5 | 30.0 | 23.5 | 22.5 | 23.0 |
| 29 | 31.5 | 30.5 | 31.0 | 31.5 | 30.5 | 31.0 | 30.5 | 29.0 | 29.5 | 22.5 | 17.5 | 19.0 |
| 30 | 31.5 | 30.5 | 31.0 | 31.5 | 30.5 | 31.0 | 30.5 | 29.5 | 30.0 | 19.5 | 18.5 | 19.0 |
| 31 | --- | --- | --- | 32.0 | 30.5 | 31.0 | 30.5 | 29.5 | 30.0 | --- | --- | --- |
| MONTH | 32.0 | 25.5 | 29.0 | 32.5 | 29.5 | 31.0 | 32.0 | 29.0 | 30.5 | 31.5 | 17.5 | 28.5 |

### OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MONTH | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

## 08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

### OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 9.6 | 8.2 | 9.2 | 7.8 | 6.0 | 6.8 | 6.3 | 5.4 | 6.1 | 3.9 | 3.0 | 3.5 |
| 2 | 9.0 | 8.1 | 8.7 | 8.6 | 7.6 | 8.0 | 6.0 | 5.3 | 5.8 | 3.6 | .0 | 2.5 |
| 3 | 8.9 | 8.1 | 8.6 | 8.7 | 8.0 | 8.3 | 5.6 | 1.1 | 4.1 | 3.8 | 2.2 | 2.8 |
| 4 | 8.9 | 7.5 | 8.4 | 8.3 | 7.2 | 7.7 | 4.9 | 1.4 | 3.4 | 4.2 | 3.0 | 3.6 |
| 5 | 8.5 | 7.3 | 7.8 | 7.4 | 6.1 | 7.0 | 5.1 | 4.2 | 4.7 | 3.8 | 2.8 | 3.6 |
| 6 | 7.7 | 7.3 | 7.5 | 7.0 | 5.9 | 6.6 | 4.9 | 4.3 | 4.6 | 4.6 | 3.6 | 3.9 |
| 7 | 7.8 | 7.4 | 7.6 | 6.3 | 5.6 | 5.9 | 4.7 | 4.0 | 4.4 | 4.0 | 3.1 | 3.6 |
| 8 | 9.7 | 7.1 | 8.1 | 5.7 | 5.1 | 5.5 | 4.7 | 4.0 | 4.4 | 5.2 | 1.6 | 3.2 |
| 9 | 9.4 | 8.6 | 8.9 | 5.6 | 4.8 | 5.4 | 5.0 | 4.4 | 4.7 | 4.9 | .8 | 2.3 |
| 10 | 9.0 | 8.3 | 8.7 | 5.4 | 5.0 | 5.2 | 5.0 | 4.2 | 4.7 | 4.1 | 1.6 | 3.2 |
| 11 | 10.7 | 8.2 | 9.0 | 5.0 | 3.3 | 4.3 | 4.7 | 3.8 | 4.4 | 4.0 | 3.3 | 3.7 |
| 12 | 10.2 | 7.6 | 8.8 | 4.8 | 3.4 | 4.2 | 5.2 | 4.1 | 4.6 | 3.9 | 3.2 | 3.6 |
| 13 | 8.9 | 7.1 | 8.1 | 5.2 | 3.4 | 4.6 | 6.9 | 4.9 | 5.6 | 3.6 | 2.6 | 3.2 |
| 14 | 8.2 | 7.8 | 8.0 | 4.8 | 3.5 | 4.4 | --- | 5.6 | 5.7 | 4.1 | 1.8 | 2.8 |
| 15 | 8.0 | 7.6 | 7.7 | 4.9 | 2.5 | 4.0 | --- | --- | 5.6 | 5.3 | .2 | 3.5 |
| 16 | 8.5 | 7.7 | 8.1 | 4.9 | 3.9 | 4.4 | --- | --- | 5.5 | 4.0 | 2.3 | 3.6 |
| 17 | 8.9 | 8.3 | 8.6 | 4.1 | --- | 4.0 | 5.7 | 4.9 | 5.5 | 4.5 | 3.6 | 4.2 |
| 18 | 8.9 | 8.3 | 8.6 | --- | --- | 4.3 | 5.3 | 4.3 | 5.0 | 3.3 | 1.1 | 1.9 |
| 19 | 8.5 | 7.8 | 8.3 | --- | --- | 4.5 | 5.0 | 4.6 | 4.8 | 1.2 | .0 | .5 |
| 20 | 7.7 | 7.0 | 7.3 | --- | --- | 4.7 | 4.7 | 4.3 | 4.5 | 1.9 | .0 | .5 |
| 21 | --- | --- | 7.0 | --- | --- | 4.9 | 4.5 | 4.0 | 4.3 | 1.1 | .0 | .2 |
| 22 | --- | --- | --- | --- | --- | 5.0 | 4.3 | 3.7 | 4.0 | .9 | .0 | .1 |
| 23 | --- | --- | --- | --- | --- | 5.2 | 4.3 | 3.6 | 4.0 | .7 | .0 | .1 |
| 24 | --- | --- | --- | --- | --- | 5.3 | 4.8 | 2.8 | 3.8 | 2.6 | .0 | 1.6 |
| 25 | --- | --- | --- | 5.8 | --- | 5.4 | 4.2 | .1 | 2.9 | 3.2 | 1.9 | 2.3 |
| 26 | 7.4 | --- | 7.0 | 5.8 | 5.1 | 5.5 | 4.9 | .8 | 3.2 | 2.1 | 1.3 | 1.8 |
| 27 | 6.7 | 5.5 | 6.2 | 5.7 | 4.5 | 5.4 | 5.4 | 5.0 | 5.2 | 1.3 | .7 | 1.0 |
| 28 | 6.7 | 5.4 | 6.0 | 6.3 | .4 | 3.0 | 5.6 | 4.6 | 5.1 | --- | --- | 1.0 |
| 29 | 6.3 | 5.0 | 5.7 | 5.5 | .5 | 3.2 | 4.8 | 4.3 | 4.6 | --- | --- | 1.1 |
| 30 | --- | --- | --- | 6.3 | 4.2 | 5.8 | 4.3 | 3.5 | 4.1 | --- | --- | 1.3 |
| 31 | --- | --- | --- | 6.6 | 5.7 | 6.3 | --- | --- | --- | --- | --- | 1.3 |
| MONTH | 10.7 | 5.0 | 7.9 | 8.7 | .4 | 5.3 | 6.9 | .1 | 4.6 | 5.3 | .0 | 2.3 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MONTH | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

## 08057445 PRAIRIE CREEK AT U.S. HIGHWAY 175, DALLAS, TX

LOCATION.--Lat 32°42'17", long 96°40'11", Dallas County, Hydrologic Unit 12030105, on left bank at downstream side of the downstream access road bridge on U.S. Highway 175, 3.4 mi (5.5 km) upstream from mouth, and 9.0 mi (14.5 km) southeast of Dallas City Hall.

DRAINAGE AREA.--9.03 mi² (23.39 km²).

PERIOD OF RECORD.--October 1975 to September 1980 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 390.00 ft (118.872 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--5 years, 5.34 ft³/s (0.151 m³/s), 8.03 in/yr (204 mm/yr), 3,870 acre-ft/yr (4.77 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,970 ft³/s (55.8 m³/s) Apr. 19, 1976, gage height, 22.38 ft (6.821 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 969 ft³/s (27.4 m³/s) Sept. 29 at 1100 hours, gage height, 18.67 ft (5.691 m), no other peak above base of 900 ft³/s (25.5 m³/s); no flow June 29 to Sept. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .02 | .28 | .43 | .59 | 1.1 | .63 | .60 | .94 | .46 | .00 | .00 | .00 |
| 2 | .03 | .09 | .50 | .50 | .91 | .51 | .55 | 1.6 | .30 | .00 | .00 | .00 |
| 3 | .02 | .11 | .55 | .35 | .69 | .36 | .60 | 2.0 | .41 | .00 | .00 | .00 |
| 4 | .02 | .07 | .55 | .32 | .50 | .40 | .29 | 1.3 | .47 | .00 | .00 | .00 |
| 5 | .02 | .05 | .58 | .34 | .75 | .40 | .40 | 1.1 | .76 | .00 | .00 | .00 |
| 6 | .02 | .07 | .57 | .36 | .73 | .48 | .60 | 1.3 | .11 | .00 | .00 | .00 |
| 7 | .02 | .05 | .53 | .43 | .63 | .53 | 1.4 | 4.0 | .20 | .00 | .00 | .00 |
| 8 | .02 | .05 | .53 | .36 | 27 | .66 | 1.5 | 4.7 | .13 | .00 | .00 | .00 |
| 9 | .01 | .90 | .43 | .48 | 10 | .02 | 1.5 | 6.5 | .08 | .00 | .00 | .00 |
| 10 | .01 | 1.3 | .59 | .50 | 7.2 | .23 | 1.3 | 1.5 | .07 | .00 | .00 | .00 |
| 11 | .02 | .67 | .66 | .60 | 7.6 | .28 | 1.5 | 1.0 | .04 | .00 | .00 | .00 |
| 12 | .02 | .54 | 11 | .79 | 2.3 | .36 | 2.2 | 3.0 | .03 | .00 | .00 | .00 |
| 13 | .01 | .19 | 9.6 | .67 | 1.2 | .01 | 97 | 3.6 | .03 | .00 | .00 | .00 |
| 14 | .01 | .11 | .32 | .85 | 1.0 | .36 | 12 | 1.3 | .03 | .00 | .00 | .00 |
| 15 | .07 | .11 | .17 | .72 | .94 | .64 | 3.2 | 274 | .03 | .00 | .00 | .00 |
| 16 | .00 | .11 | .09 | .74 | .92 | .53 | 1.0 | 38 | .02 | .00 | .00 | .00 |
| 17 | .03 | .24 | .09 | .83 | 1.5 | .60 | 1.1 | 3.8 | .01 | .00 | .00 | .00 |
| 18 | .02 | .21 | .21 | .83 | .96 | .66 | .72 | 6.6 | .01 | .00 | .00 | .00 |
| 19 | .03 | .27 | .23 | 1.3 | .73 | .50 | .70 | 1.2 | .00 | .00 | .00 | .00 |
| 20 | .03 | .24 | .02 | 1.2 | .19 | .43 | .94 | 1.2 | 23 | .00 | .00 | .00 |
| 21 | .03 | 3.6 | .30 | 49 | .50 | .40 | 1.0 | .43 | 3.6 | .00 | .00 | .00 |
| 22 | .00 | 6.7 | 6.6 | 161 | .63 | .36 | 1.0 | .87 | 76 | .00 | .00 | .00 |
| 23 | .03 | 1.5 | 97 | 9.1 | .63 | .50 | 1.0 | .29 | 1.6 | .00 | .00 | .00 |
| 24 | .01 | 1.1 | 11 | 6.1 | .19 | 1.6 | 1.0 | .05 | .69 | .00 | .00 | .00 |
| 25 | .00 | .82 | 1.9 | 1.6 | .17 | 1.6 | 50 | .06 | .11 | .00 | .00 | .00 |
| 26 | .02 | .77 | 1.1 | 1.1 | .56 | .80 | 6.3 | .82 | .03 | .00 | .00 | .00 |
| 27 | .02 | .88 | .94 | .03 | .36 | 2.0 | 1.8 | .67 | .02 | .00 | .00 | .00 |
| 28 | .03 | .51 | .84 | .03 | .03 | 63 | 1.3 | .59 | .01 | .00 | .00 | .00 |
| 29 | .04 | .52 | .36 | 6.5 | .19 | 3.8 | 1.2 | .52 | .00 | .00 | .00 | 138 |
| 30 | 15 | .40 | .40 | 6.1 | --- | 2.0 | 1.0 | .32 | .00 | .00 | .00 | 13 |
| 31 | 6.5 | --- | .40 | 1.2 | --- | .00 | --- | .28 | --- | .00 | .00 | --- |
| TOTAL | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | .00 | .00 | [illegible] |
| MEAN | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MAX | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MIN | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| CFSM | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| IN. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| AC-FT | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] CFSM [illegible] IN [illegible] AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] CFSM [illegible] IN [illegible] AC-FT [illegible]

## [illegible] EAST FORK TRINITY RIVER AT MCKINNEY, TX

**LOCATION.**--Lat [illegible], long [illegible], Collin County, Hydrologic Unit [illegible], on downstream side of highway embankment near left end of main channel bridge on State Highways [illegible] and [illegible], [illegible] ft ([illegible] m) downstream from Honey Creek, [illegible] mi ([illegible] km) upstream from Southern Pacific Railroad Co. bridge, [illegible] mi ([illegible] km) upstream from Clemons Creek, [illegible] mi ([illegible] km) north of McKinney, [illegible] mi ([illegible] km) upstream from Lavon Dam, and [illegible] mi ([illegible] km) upstream from mouth.

**DRAINAGE AREA.**--164 mi² (425 km²).

**PERIOD OF RECORD.**--October 1975 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is [illegible] ft ([illegible] m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Records good. At end of year, flow from 89.1 mi² (230.8 km²) above this station was affected at times by discharge from the flood-detention pools of 48 floodwater-retarding structures with a combined detention capacity of 26,080 acre-ft (32.2 hm³). A nonrecording rain gage is located at station. General observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--5 years, [illegible] ft³/s ([illegible] m³/s), [illegible] acre-ft/yr ([illegible] hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 13,100 ft³/s (371 m³/s) [illegible], gage height, [illegible] ft ([illegible] m), from rating curve extended above 800 ft³/s (22.7 m³/s); no flow at times.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since [illegible], about 20 ft (6.1 m) in April [illegible], discharge not determined, from information by State Department of Highways and Public Transportation.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, [illegible] ft³/s ([illegible] m³/s) Sept. [illegible] at [illegible] hours, gage height, [illegible] ft ([illegible] m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER [illegible] TO SEPTEMBER [illegible]
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | | [illegible] | [illegible] | | [illegible] | | [illegible] | | [illegible] | [illegible] | |
| TOTAL | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MEAN | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MAX | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MIN | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| AC-FT | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

CAL YR [illegible] TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]
WTR YR [illegible] TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]

## 08059400 SISTER GROVE CREEK NEAR BLUE RIDGE, TX

LOCATION.--Lat 33°17'40", long 96°28'58", Collin County, Hydrologic Unit 12030106, on left bank at upstream side of highway embankment of bridge on Farm Road 545, 3.5 mi (5.6 km) upstream from Hatler Banch, 4.8 mi (7.7 km) west of Blue Ridge, 7.4 mi (11.9 km) upstream from Stiff Creek, 14.7 mi (23.7 km) upstream from mouth, and 24.7 mi (39.7 km) upstream from Lavon Dam.

DRAINAGE AREA.--83.1 mi² (215.2 km²).

PERIOD OF RECORD.--July 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is 536.29 ft (163.461 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. At end of year, flow from 47.4 mi² (122.8 km²) above this station was affected at times by discharge from the flood-detention pools of 34 floodwater-retarding structures with a combined detention capacity of 12,710 acre-ft (15.7 hm³). A nonrecording rain gage is located at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--5 years, 23.7 ft³/s (0.671 m³/s), 17,170 acre-ft/yr (21.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,650 ft³/s (132 m³/s) Apr. 19, 1977, gage height, 16.93 ft (5.160 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1900, 20.7 ft (6.31 m) probably in July 1913, from information furnished by State Department of Highways and Public Transportation. The probable date is from published records for discontinued station 08059500 located 9.7 mi (15.6 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 375 ft³/s (10.6 m³/s) May 15 at 2230 hours, gage height, 9.63 ft (2.935 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | 3.9 | 2.2 | 4.2 | 3.6 | 4.3 | 4.7 | 2.3 | 7.9 | 9.0 | .00 | .00 |
| 2 | .00 | 1.8 | 2.2 | 4.2 | 3.4 | 3.7 | 4.1 | 7.2 | 4.1 | 10 | .00 | .00 |
| 3 | .40 | 1.2 | 2.5 | 4.0 | 2.9 | 3.7 | 4.1 | 2.1 | .74 | 12 | .00 | .00 |
| 4 | .75 | 1.0 | 2.7 | 4.0 | 3.0 | 4.2 | 3.7 | 3.3 | .56 | 3.6 | .00 | .00 |
| 5 | .79 | .43 | 2.8 | 3.7 | 3.3 | 5.8 | 3.4 | 3.4 | .33 | .09 | .00 | .00 |
| 6 | .75 | .24 | 2.7 | 4.6 | 3.4 | 8.0 | 3.4 | 4.0 | .18 | .01 | .00 | .00 |
| 7 | .33 | .19 | 2.8 | 4.2 | 3.3 | 7.0 | 3.4 | 6.6 | .12 | 3.4 | .00 | .00 |
| 8 | .06 | .38 | 2.9 | 4.2 | 4.7 | 4.3 | 3.5 | 4.4 | .12 | 13 | .00 | .00 |
| 9 | .00 | .67 | 2.9 | 4.2 | 13 | 4.5 | 3.6 | 6.1 | .15 | 13 | .00 | .00 |
| 10 | .00 | .58 | 2.9 | 4.0 | 14 | 4.6 | 2.9 | 6.3 | .11 | 14 | .00 | .00 |
| 11 | .00 | .73 | 3.5 | 2.9 | 7.8 | 4.8 | 2.9 | 5.1 | .06 | 8.4 | .00 | .00 |
| 12 | .00 | 1.1 | 4.8 | 2.7 | 8.0 | 4.7 | 2.8 | 3.7 | .02 | .36 | .00 | .00 |
| 13 | .00 | 1.1 | 5.9 | 2.9 | 8.0 | 4.0 | 3.5 | 2.8 | .00 | .03 | .00 | .00 |
| 14 | .00 | .77 | 5.6 | 2.9 | 7.4 | 3.6 | 5.2 | 4.0 | .00 | .00 | .00 | .00 |
| 15 | .00 | .94 | 5.2 | 2.9 | 6.9 | 3.7 | 5.3 | 55 | .00 | .00 | .00 | .00 |
| 16 | .00 | 1.4 | 4.0 | 2.9 | 6.1 | 3.5 | 4.4 | 103 | .00 | .00 | .00 | .00 |
| 17 | .00 | 1.8 | 3.7 | 2.9 | 5.5 | 3.4 | 3.9 | 63 | .00 | .00 | .00 | .00 |
| 18 | .00 | 1.5 | 3.7 | 2.7 | 5.3 | 3.3 | 3.6 | 38 | .00 | .00 | .00 | .00 |
| 19 | .00 | 1.2 | 3.7 | 2.9 | 5.8 | 5.9 | 3.3 | 26 | .00 | .00 | .00 | .00 |
| 20 | .00 | 1.1 | 3.7 | 3.1 | 7.9 | 8.0 | 3.1 | 17 | .00 | .00 | .00 | .00 |
| 21 | .00 | 1.5 | 3.7 | 3.4 | 11 | 6.4 | 3.1 | 13 | 4.4 | .00 | .00 | .00 |
| 22 | .00 | 1.8 | 3.7 | 11 | 8.3 | 5.9 | 2.9 | 12 | 9.0 | .00 | .00 | .00 |
| 23 | .00 | 1.8 | 10 | 9.3 | 5.8 | 5.3 | 2.4 | 10 | 5.8 | .00 | .00 | .00 |
| 24 | .00 | 2.2 | 27 | 6.8 | 4.7 | 6.0 | 2.2 | 10 | .84 | .00 | .00 | .00 |
| 25 | .00 | 2.3 | 15 | 5.2 | 4.5 | 5.1 | 2.6 | 9.8 | .20 | .00 | .00 | .00 |
| 26 | .00 | 2.6 | 7.6 | 4.2 | 4.1 | 4.4 | 3.2 | 8.9 | .09 | .00 | .00 | .00 |
| 27 | .00 | 2.7 | 6.0 | 3.5 | 5.3 | 4.3 | 3.4 | 8.4 | .05 | .00 | .00 | .00 |
| 28 | .00 | 2.5 | 5.2 | 3.2 | 5.1 | 6.1 | 3.7 | 8.4 | .02 | .00 | .00 | .00 |
| 29 | .00 | 2.2 | 4.9 | 3.1 | 4.9 | 8.1 | 2.9 | 8.2 | .00 | .00 | .00 | 119 |
| 30 | .00 | 2.2 | 4.2 | 3.2 | --- | 6.9 | 2.6 | 8.4 | 1.8 | .00 | .00 | 51 |
| 31 | 7.6 | --- | 4.2 | 3.7 | --- | 5.3 | --- | 7.9 | --- | .00 | .00 | --- |
| TOTAL | 10.68 | 43.83 | 161.9 | 126.7 | 177.0 | 158.8 | 103.8 | 468.3 | 36.59 | 86.89 | .00 | 170.00 |
| MEAN | .34 | 1.46 | 5.22 | 4.09 | 6.10 | 5.12 | 3.46 | 15.1 | 1.22 | 2.80 | .000 | 5.67 |
| MAX | 7.6 | 3.9 | 27 | 11 | 14 | 8.1 | 5.3 | 103 | 9.0 | 14 | .00 | 119 |
| MIN | .00 | .19 | 2.2 | 2.7 | 2.9 | 3.3 | 2.2 | 2.1 | .00 | .00 | .00 | .00 |
| AC-FT | 21 | 87 | 321 | 251 | 351 | 315 | 206 | 929 | 73 | 172 | .00 | 337 |

CAL YR 1979 TOTAL 14052.42 MEAN 38.5 MAX 756 MIN .00 AC-FT 27870
WTR YR 1980 TOTAL 1544.49 MEAN 4.22 MAX 119 MIN .00 AC-FT 3060

## 08060500 LAVON LAKE NEAR LAVON, TX

LOCATION.--Lat 33°01'54", long 96°28'56", Collin County, Hydrologic Unit 12030106, in right abutment of spillway in dam on East Fork Trinity River, 3,850 ft (1,170 m) upstream from St. Louis Southwestern Railway Lines bridge, 4,000 ft (1,200 m) upstream from bridge on State Highway 78, 2.9 mi (4.7 km) west of Lavon, and 55.9 mi (89.9 km) upstream from mouth.

DRAINAGE AREA.--770 mi² (1,990 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1953 to current year. Prior to October 1970, published as Lavon Reservoir.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Jan. 20, 1954, nonrecording gage in the approach channel at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam 18,860 ft (5,749 m) long, including a 568-foot (173 m) gated spillway with twelve 40.0- by 28.0-foot (12.2 by 8.5 m) tainter gates. The original dam was 9,499 ft (2,895 m) long, but conservation capacity was increased to the present size in December 1975. Deliberate impoundment began Sept. 14, 1953, and the dam was completed in October 1953. The low-flow outlets consists of five 36-inch-diameter (914 mm) controlled sluice gates. The capacity table is based on Table No. 9 (Design Memo 1970 Conditions). The lake was designed for flood control and water conservation. Water for municipal supply can be released down to elevation 453.0 ft (138.07 m). Flow is affected at times by discharge from the flood-detention pools of 147 floodwater-retarding structures with a combined detention capacity of 68,450 acre-ft (84.4 hm³). These structures control runoff from 239 mi² (619 km²) in the East Fork Trinity River, Pilot Grove Creek, and Sister Grove Creek drainage basins. Corps of Engineers gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

|  | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 514.0 | - |
| Design flood | 509.0 | 921,200 |
| Top of tainter gates | 503.5 | 748,200 |
| Top of conservation pool | 492.0 | 456,500 |
| Crest of spillway (sill of tainter gates) | 475.5 | 178,300 |
| Lowest gated outlet (invert) | 453.0 | 12,700 |

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 523,500 acre-ft (645 hm³) June 4, 1979, elevation, 494.98 ft (150.870 m); minimum since lake first filled in 1957, 80,150 acre-ft (98.8 hm³) Apr. 17, 1976, elevation, 465.96 ft (142.025 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 416,400 acre-ft (513 hm³) Oct. 3 at 1900 hours, elevation, 490.06 ft (149.370 m); minimum, 291,200 acre-ft (359 hm³) Sept. 26 at 1930 hours, elevation, 483.22 ft (147.285 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 483.0 | 287,600 | 489.0 | 395,500 |
| 485.0 | 321,500 | 491.0 | 435,500 |
| 487.0 | 357,500 | | |

### CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 415000 | 401600 | 389900 | 388100 | 391200 | 393000 | 386600 | 381800 | 381000 | 364000 | 336200 | 308900 |
| 2 | 414000 | 401000 | 389500 | 388500 | 391000 | 392800 | 387000 | 382700 | 381000 | 363200 | 334600 | 308400 |
| 3 | 413600 | 400200 | 388900 | 388100 | 391200 | 391800 | 387100 | 382900 | 380800 | 362300 | 333900 | 307300 |
| 4 | 412600 | 399200 | 388900 | 387500 | 391000 | 393100 | 387000 | 382500 | 380000 | 361400 | 332800 | 306600 |
| 5 | 411800 | 400000 | 388700 | 386400 | 391000 | 392400 | 386200 | 382200 | 379300 | 360500 | 331700 | 305600 |
| 6 | 411400 | 399200 | 388500 | 387000 | 390800 | 391800 | 384800 | 382000 | 378500 | 359500 | 331000 | 305300 |
| 7 | 410000 | 398600 | 387900 | 386800 | 391200 | 392600 | 384600 | 381800 | 378100 | 358400 | 330100 | 304600 |
| 8 | 409800 | 397800 | 387500 | 386000 | 391800 | 392200 | 384300 | 381600 | 377800 | 357700 | 329400 | 304100 |
| 9 | 409500 | 399000 | 387100 | 385600 | 391800 | 391400 | 383700 | 381000 | 377000 | 356800 | 328500 | 303400 |
| 10 | 408300 | 398600 | 386800 | 385600 | 395100 | 391200 | 382700 | 380600 | 376000 | 355600 | 328000 | 302700 |
| 11 | 407900 | 398000 | 388300 | 385400 | 396100 | 391400 | 382900 | 380400 | 375300 | 354700 | 327300 | 301900 |
| 12 | 407500 | 397000 | 388500 | 384300 | 395900 | 391400 | 383300 | 380400 | 374300 | 353800 | 326400 | 301000 |
| 13 | 407100 | 396800 | 388300 | 384500 | 395900 | 391000 | 383900 | 380000 | 373400 | 352700 | 325700 | 300200 |
| 14 | 405700 | 396500 | 387900 | 384300 | 396100 | 390600 | 383900 | 379700 | 372300 | 351800 | 324500 | 300000 |
| 15 | 406100 | 396100 | 387700 | 384500 | 396700 | 390600 | 383500 | 383300 | 371500 | 350700 | 323600 | 299400 |
| 16 | 405500 | 395300 | 387300 | 384300 | 396700 | 390600 | 382900 | 386000 | 370900 | 349800 | 322900 | 298000 |
| 17 | 405300 | 394900 | 386600 | 384100 | 396100 | 390800 | 382900 | 387700 | 370200 | 348900 | 321500 | 298000 |
| 18 | 404900 | 394700 | 386000 | 383700 | 395500 | 389300 | 382700 | 388100 | 369200 | 347900 | 320600 | 296800 |
| 19 | 403900 | 394500 | 385800 | 384100 | 396100 | 388900 | 382500 | 388100 | 368500 | 346800 | 319600 | 296000 |
| 20 | 403500 | 395100 | 385600 | 385000 | 395900 | 368700 | 382200 | 387300 | 370900 | 346100 | 318900 | 294800 |
| 21 | 403100 | 394700 | 385800 | 386800 | 395900 | 388500 | 381600 | 387100 | 370800 | 345600 | 318200 | 294200 |
| 22 | 404100 | 394500 | 386800 | 392000 | 395900 | 388300 | 381000 | 387000 | 370600 | 344800 | 317500 | 293800 |
| 23 | 403500 | 393700 | 389700 | 392400 | 395500 | 388100 | 380400 | 386200 | 370400 | 343800 | 316500 | 293300 |
| 24 | 402900 | 393100 | 390000 | 392400 | 395300 | 387700 | 382200 | 386000 | 369400 | 342900 | 315600 | 292500 |
| 25 | 402300 | 393700 | 389900 | 392600 | 395300 | 387000 | 382900 | 385800 | 368900 | 341800 | 314700 | 292300 |
| 26 | 401600 | 391800 | 389700 | 392600 | 394700 | 386800 | 383100 | 385400 | 368300 | 341000 | 313900 | 293000 |
| 27 | 401400 | 392000 | 389500 | 392400 | 394300 | 387500 | 382200 | 385000 | 367400 | 340900 | 313000 | 294200 |
| 28 | 401000 | 391400 | 389500 | 392800 | 394100 | 387900 | 381800 | 384300 | 366200 | 339800 | 312300 | 295500 |
| 29 | 399600 | 390800 | 389300 | 392400 | 393700 | 388100 | 380600 | 383700 | 365700 | 339100 | 311300 | 300400 |
| 30 | 402100 | 390000 | 388900 | 393000 | --- | 387300 | 380400 | 383300 | 364900 | 338200 | 310400 | 301900 |
| 31 | 401900 | --- | 388700 | 392000 | --- | 386600 | --- | 382300 | --- | 337100 | 309200 | --- |
| MAX | 415000 | 401600 | 390000 | 393000 | 396700 | 393100 | 387100 | 388100 | 381000 | 364000 | 336200 | 308900 |
| MIN | 399600 | 390000 | 385600 | 383700 | 390800 | 386600 | 380400 | 379700 | 364900 | 337100 | 309200 | 292300 |
| (†) | 489.32 | 488.71 | 488.64 | 488.81 | 488.90 | 488.53 | 488.21 | 488.31 | 487.39 | 485.87 | 484.28 | 483.85 |
| (‡) | -13100 | -11900 | -1300 | +3300 | +1700 | -7100 | -6200 | +1900 | -17400 | -27800 | -27900 | -7300 |
| (††) | 7490 | 5910 | 6140 | 6940 | 5550 | 6530 | 7060 | 7930 | 11320 | 14540 | 14740 | 11790 |

CAL YR 1979 MAX 522800 MIN 258600 ‡ +126600 †† 77860
WTR YR 1980 MAX 415000 MIN 292300 ‡ -113100 †† 105900

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal and industrial uses by North Texas Municipal Water District and the city of Garland.

## 08060500 LAVON LAKE NEAR LAVON, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to September 1974, October 1975 to current year.

### 330203096284901 LAVON LAKE SITE AC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | | |
| 08... | 1044 | 1.0 | 300 | 8.3 | 7.5 | 1.70 | 11.4 | 97 | 130 | 11 |
| 08... | 1046 | 10 | 300 | 8.3 | 7.5 | -- | 11.3 | 96 | -- | -- |
| 08... | 1048 | 20 | 300 | 8.3 | 7.5 | -- | 11.3 | 96 | -- | -- |
| 08... | 1050 | 30 | 300 | 8.3 | 7.5 | -- | 11.3 | 96 | -- | -- |
| 08... | 1052 | 40 | 300 | 8.3 | 7.5 | -- | 11.3 | 96 | 140 | 12 |
| MAY | | | | | | | | | | |
| 13... | 1355 | 1.0 | 313 | 8.3 | 22.0 | 1.20 | 8.7 | 101 | 130 | 8 |
| 13... | 1357 | 10 | 315 | 8.2 | 21.0 | -- | 8.1 | 92 | -- | -- |
| 13... | 1358 | 20 | 315 | 8.1 | 20.5 | -- | 7.6 | 85 | -- | -- |
| 13... | 1359 | 30 | 315 | 8.1 | 20.5 | -- | 7.6 | 85 | -- | -- |
| 13... | 1400 | 40 | 315 | 7.9 | 20.0 | -- | 6.7 | 74 | 130 | 8 |
| AUG | | | | | | | | | | |
| 11... | 1310 | 1.0 | 284 | 8.4 | 29.5 | 1.00 | 7.9 | 104 | 110 | 3 |
| 11... | 1312 | 10 | 288 | 8.1 | 28.5 | -- | 7.1 | 92 | -- | -- |
| 11... | 1314 | 20 | 288 | 8.0 | 28.5 | -- | 6.7 | 87 | -- | -- |
| 11... | 1316 | 30 | 288 | 7.9 | 28.5 | -- | 5.9 | 77 | -- | -- |
| 11... | 1318 | 33 | 288 | 7.8 | 28.5 | -- | 5.8 | 75 | 110 | 6 |

| DATE | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 08... | 49 | 2.9 | 12 | .5 | 4.4 | 150 | 0 | 22 | 5.5 |
| 08... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 08... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 08... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 08... | 49 | 3.1 | 13 | .5 | 4.2 | 150 | 0 | 24 | 7.6 |
| MAY | | | | | | | | | |
| 13... | 47 | 3.4 | 9.9 | .4 | 4.0 | 150 | 0 | 23 | 6.7 |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | 47 | 3.4 | 10 | .4 | 4.0 | 150 | 0 | 24 | 7.4 |
| AUG | | | | | | | | | |
| 11... | 39 | 3.1 | 11 | .5 | 4.6 | 120 | 5 | 23 | 8.0 |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | 40 | 3.2 | 12 | .5 | 4.5 | 130 | 0 | 23 | 8.0 |

| DATE | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 08... | .3 | 4.0 | 174 | .09 | 1.0 | 1.1 | .010 | <10 | <1 |
| 08... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 08... | -- | -- | -- | .09 | 1.0 | 1.1 | .010 | 10 | 0 |
| 08... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 08... | -- | 4.1 | 179 | .06 | .95 | 1.0 | .010 | <10 | <1 |
| MAY | | | | | | | | | |
| 13... | .3 | .7 | 169 | .01 | .62 | .63 | .010 | <10 | <3 |
| 13... | -- | -- | -- | .01 | .69 | .70 | .020 | 30 | 10 |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | -- | -- | -- | .02 | .76 | .78 | .010 | 10 | 0 |
| 13... | -- | 1.0 | 171 | .02 | .71 | .73 | .010 | <10 | 20 |
| AUG | | | | | | | | | |
| 11... | .3 | 3.6 | 157 | .00 | 1.1 | 1.1 | .020 | <10 | 2 |
| 11... | -- | -- | -- | .00 | .79 | .79 | .030 | 10 | 0 |
| 11... | -- | -- | -- | .00 | .68 | .68 | .030 | 20 | 0 |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | -- | 3.7 | 159 | .00 | .79 | .79 | .030 | <10 | 5 |

### 330205096280001 LAVON LAKE SITE AL

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 08... | 1115 | 1.0 | 300 | 8.3 | 8.0 | 11.3 | 97 |
| 08... | 1117 | 10 | 300 | 8.3 | 8.0 | 11.3 | 97 |
| 08... | 1119 | 20 | 300 | 8.3 | 8.0 | 11.3 | 97 |
| 08... | 1121 | 30 | 300 | 8.3 | 8.0 | 11.3 | 97 |
| 08... | 1123 | 42 | 300 | 8.3 | 7.5 | 11.3 | 96 |
| MAY | | | | | | | |
| 13... | 1335 | 1.0 | 315 | 8.2 | 21.5 | 8.5 | 98 |
| 13... | 1336 | 10 | 315 | 8.2 | 21.0 | 8.2 | 93 |
| 13... | 1337 | 20 | 315 | 8.1 | 21.0 | 7.8 | 89 |
| 13... | 1338 | 30 | 315 | 8.0 | 20.0 | 7.1 | 79 |
| 13... | 1339 | 40 | 321 | 7.6 | 19.0 | 4.3 | 47 |
| AUG | | | | | | | |
| 11... | 1200 | 1.0 | 288 | 8.1 | 29.0 | 7.1 | 93 |
| 11... | 1202 | 10 | 288 | 7.8 | 28.5 | 7.0 | 91 |
| 11... | 1204 | 20 | 288 | 7.8 | 28.5 | 5.7 | 74 |
| 11... | 1206 | 33 | 288 | 7.5 | 28.5 | 5.0 | 65 |

### 330654096273201 LAVON LAKE SITE BC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 08... | 1315 | 1.0 | 306 | 8.2 | 8.0 | .90 | 11.1 |
| 08... | 1318 | 10 | 306 | 8.2 | 7.5 | -- | 11.1 |
| 08... | 1320 | 24 | 306 | 8.2 | 7.5 | -- | 11.0 |
| MAY | | | | | | | |
| 13... | 1430 | 1.0 | 315 | 8.2 | 22.5 | .90 | 8.2 |
| 13... | 1431 | 10 | 315 | 8.1 | 22.5 | -- | 8.0 |
| 13... | 1432 | 20 | 315 | 8.1 | 22.0 | -- | 7.8 |
| 13... | 1433 | 24 | 315 | 8.1 | 22.0 | -- | 7.6 |
| AUG | | | | | | | |
| 11... | 1430 | 1.0 | 280 | 8.3 | 31.0 | .80 | 7.9 |
| 11... | 1432 | 10 | 280 | 8.0 | 30.0 | -- | 7.1 |
| 11... | 1434 | 18 | 283 | 7.7 | 29.5 | -- | 5.2 |

| DATE | OXYGEN, DISSOLVED (PERCENT SATURATION) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 08... | 95 | .07 | 1.1 | 1.2 | .010 | 0 | 0 |
| 08... | 94 | .08 | 1.0 | 1.1 | .020 | 0 | 0 |
| 08... | 93 | .06 | -- | -- | 1.100 | 10 | 0 |
| MAY | | | | | | | |
| 13... | 95 | .01 | .80 | .81 | .030 | 20 | 10 |
| 13... | 93 | .01 | .87 | .88 | .020 | 20 | 0 |
| 13... | 91 | .03 | 1.8 | 1.8 | .070 | 30 | 0 |
| 13... | 88 | .01 | .73 | .74 | .010 | 20 | 10 |
| AUG | | | | | | | |
| 11... | 107 | .00 | .72 | .72 | .030 | 10 | 0 |
| 11... | 95 | .00 | .81 | .81 | .030 | 0 | 0 |
| 11... | 68 | .00 | 1.4 | 1.4 | .050 | 10 | 0 |

## LAVON LAKE NEAR LAVON, TX--Continued

### 330954096261201 LAVON LAKE SITE CC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 08... | 1420 | 1.0 | 346 | 8.2 | 7.0 | .90 | 11.7 |
| 08... | 1422 | 11 | 346 | 8.2 | 6.0 | -- | 11.3 |
| MAY | | | | | | | |
| 13... | 1600 | 1.0 | 360 | 7.8 | 24.5 | .40 | 6.8 |
| 13... | 1601 | 8.0 | 366 | 7.7 | 24.0 | -- | 5.3 |
| AUG | | | | | | | |
| 11... | 1530 | 1.0 | 324 | 8.1 | 31.0 | .40 | 7.4 |
| 11... | 1532 | 7.0 | 324 | 7.7 | 29.0 | -- | 4.0 |

| DATE | OXYGEN, DISSOLVED (PERCENT SATURATION) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 08... | 98 | 1.2 | .02 | 1.2 | .030 | 30 | 0 |
| 08... | 92 | .02 | 1.2 | 1.2 | .030 | 40 | 0 |
| MAY | | | | | | | |
| 13... | 83 | .01 | 1.0 | 1.0 | .040 | 20 | 10 |
| 13... | 64 | .01 | .98 | .99 | .040 | 40 | 10 |
| AUG | | | | | | | |
| 11... | 100 | .00 | 1.1 | 1.1 | .070 | 10 | 0 |
| 11... | 53 | .00 | 1.0 | 1.0 | .100 | 40 | 30 |

### 331023096250101 LAVON LAKE SITE DC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 08... | 1450 | 1.0 | 344 | 8.3 | 6.5 | .90 | 12.0 | 99 | 150 |
| 08... | 1452 | 10 | 344 | 8.3 | 6.0 | -- | 12.3 | 100 | 150 |
| MAY | | | | | | | | | |
| 13... | 1515 | 1.0 | 348 | 8.0 | 25.0 | .30 | 7.9 | 96 | 140 |
| 13... | 1516 | 5.0 | 352 | 7.6 | 24.5 | -- | 5.5 | 67 | -- |
| 13... | 1517 | 10 | 352 | 7.5 | 23.5 | -- | 4.6 | 55 | 150 |
| AUG | | | | | | | | | |
| 11... | 1600 | 1.0 | 315 | 8.4 | 31.0 | .40 | 7.3 | 99 | 120 |
| 11... | 1602 | 9.0 | 323 | 7.4 | 29.0 | -- | 3.5 | 46 | 120 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 08... | 15 | 56 | 3.5 | 13 | .5 | 4.4 | 170 | 0 | -- |
| 08... | 12 | 55 | 3.4 | 12 | .4 | 4.4 | 170 | 0 | 30 |
| MAY | | | | | | | | | |
| 13... | 4 | 51 | 4.0 | 13 | .5 | 4.3 | 170 | 0 | 28 |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | 6 | 52 | 3.9 | 13 | .5 | 4.3 | 170 | 0 | 29 |
| AUG | | | | | | | | | |
| 11... | 1 | 42 | 3.4 | 13 | .5 | 4.7 | 140 | 2 | 25 |
| 11... | 1 | 44 | 3.4 | 14 | .5 | 4.9 | 150 | 0 | 26 |

### 331023096250101 LAVON LAKE SITE DC--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | IRON, DIS-SOLVED (UG/L AS FE) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 08... | 5.7 | 2.2 | -- | .00 | -- | -- | .040 | <10 | 2 |
| 08... | 6.6 | 2.0 | 197 | .00 | -- | -- | .060 | 10 | 3 |
| MAY | | | | | | | | | |
| 13... | 7.0 | 2.6 | 194 | .02 | 1.0 | 1.0 | .040 | 10 | <3 |
| 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13... | 7.0 | 2.8 | 196 | .01 | 1.1 | 1.1 | .010 | <10 | 40 |
| AUG | | | | | | | | | |
| 11... | 8.7 | 3.9 | 172 | .00 | .88 | .88 | .060 | <10 | 2 |
| 11... | 8.8 | 4.5 | 180 | .00 | 1.0 | 1.0 | .070 | <10 | 20 |

### 330448096315601 LAVON LAKE SITE EC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMP-LING DEPTH (FT) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH (UNITS) | TEMPER-ATURE, WATER (DEG C) | TRANS-PAR-ENCY (SECCHI DISK) (M) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | HARD-NESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 08... | 1215 | 1.0 | 316 | 7.9 | 8.0 | 1.00 | 9.9 | 85 | 140 |
| 08... | 1217 | 10 | 316 | 8.1 | 7.0 | -- | 10.8 | 90 | 140 |
| MAY | | | | | | | | | |
| 13... | 1250 | 1.0 | 316 | 8.0 | 24.0 | .40 | 7.8 | 94 | 130 |
| 13... | 1252 | 7.0 | 334 | 7.5 | 23.0 | -- | 4.7 | 55 | 140 |
| AUG | | | | | | | | | |
| 11... | 1345 | 1.0 | 274 | 8.5 | 31.0 | .70 | 8.4 | 114 | 100 |
| 11... | 1347 | 6.0 | 274 | 8.4 | 30.5 | -- | 8.2 | 111 | 100 |

| DATE | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 08... | 6 | 50 | 2.9 | 11 | .4 | 4.3 | 160 | 0 | 25 |
| 08... | 5 | 50 | 2.8 | 12 | .4 | 4.3 | 160 | 0 | 24 |
| MAY | | | | | | | | | |
| 13... | 0 | 47 | 3.3 | 10 | .4 | 4.1 | 160 | 0 | 22 |
| 13... | 0 | 50 | 3.3 | 11 | .4 | 3.9 | 170 | 0 | 17 |
| AUG | | | | | | | | | |
| 11... | 0 | 36 | 3.0 | 12 | .5 | 4.9 | 120 | 4 | 23 |
| 11... | 1 | 36 | 3.1 | 12 | .5 | 4.3 | 120 | 2 | 24 |

| DATE | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | IRON, DIS-SOLVED (UG/L AS FE) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 08... | 7.0 | 3.2 | 182 | .12 | 1.1 | 1.2 | .070 | <10 | 2 |
| 08... | 6.7 | 3.3 | 182 | .06 | .97 | 1.0 | .030 | <10 | 4 |
| MAY | | | | | | | | | |
| 13... | 6.8 | 1.2 | 173 | .01 | .83 | .84 | .020 | <10 | 5 |
| 13... | 5.6 | 2.0 | 177 | .01 | .87 | .88 | .140 | <10 | 110 |
| AUG | | | | | | | | | |
| 11... | 8.5 | 3.7 | 154 | .00 | .97 | .97 | .040 | <10 | 2 |
| 11... | 8.5 | 3.8 | 153 | .00 | .72 | .72 | .040 | <10 | 2 |

### LAVON LAKE NEAR LAVON, TX--Continued

### 330203096284901 LAVON LAKE SITE AC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| | | | | | | |
|---|---|---|---|---|---|---|
| DATE | JAN 8,80 | | MAY 13,80 | | AUG 11,80 | |
| TIME | 1045 | | 1356 | | 1311 | |
| TOTAL CELLS/ML | 8400 | | 5300 | | 210000 | |
| DIVERSITY: DIVISION | 1.2 | | 1.2 | | 0.1 | |
| .CLASS | 1.2 | | 1.2 | | 0.1 | |
| ..ORDER | 0.0 | | 2.1 | | 0.6 | |
| ...FAMILY | 0.0 | | 2.7 | | 0.7 | |
| ....GENUS | 0.0 | | 3.1 | | 1.5 | |
| ORGANISM | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT |
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | 140 | 2 | 64 | 1 | * | 0 |
| ...HYDRODICTYACEAE | | | | | | |
| ....PEDIASTRUM | -- | - | 210 | 4 | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 570 | 7 | 190 | 4 | * | 0 |
| ....CHLORELLA | 1400# | 17 | * | 0 | -- | - |
| ....DICTYOSPHAERIUM | -- | - | -- | - | * | 0 |
| ....KIRCHNERIELLA | 360 | 4 | -- | - | -- | - |
| ....OOCYSTIS | -- | - | 39 | 1 | -- | - |
| ....SELENASTRUM | -- | - | 64 | 1 | * | 0 |
| ....TETRAEDRON | -- | - | -- | - | * | 0 |
| ...SCENEDESMACEAE | | | | | | |
| ....SCENEDESMUS | 140 | 2 | * | 0 | * | 0 |
| ....TETRASTRUM | -- | - | 51 | 1 | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | 220 | 4 | -- | - |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 3200# | 38 | * | 0 | * | 0 |
| ....MELOSIRA | 2100# | 25 | 370 | 7 | -- | - |
| ..PENNALES | | | | | | |
| ...FRAGILARIACEAE | | | | | | |
| ....FRAGILARIA | -- | - | -- | - | * | 0 |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | -- | - | * | 0 | * | 0 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | 71 | 1 | -- | - | -- | - |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | | | |
| ....CHROOMONAS | -- | - | 51 | 1 | -- | - |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | 430 | 5 | * | 0 | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | -- | - | 1200# | 23 | 4000 | 2 |
| ....ANACYSTIS | -- | - | 500 | 9 | 13000 | 6 |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENA | -- | - | 570 | 11 | 4300 | 2 |
| ....ANABAENOPSIS | -- | - | -- | - | 1200 | 1 |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | -- | - | 46000# | 22 |
| ....OSCILLATORIA | -- | - | 1500# | 29 | 140000# | 66 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....TRACHELOMONAS | -- | - | 64 | 1 | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

330448096315601 LAVON LAKE SITE EC

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| DATE | JAN 8,80 | MAY 13,80 | AUG 11,80 |
|---|---|---|---|
| TIME | 1216 | 1251 | 1346 |
| TOTAL CELLS/ML | 5000 | 14000 | 100000 |
| DIVERSITY: DIVISION | 1.2 | 1.0 | 0.4 |
| .CLASS | 1.2 | 1.0 | 0.4 |
| ..ORDER | 1.2 | 1.9 | 1.1 |
| ...FAMILY | 1.5 | 2.3 | 1.5 |
| ....GENUS | 2.3 | 3.2 | 2.4 |

| ORGANISM | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | 97 | 2 | * | 0 | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 450 | 9 | 330 | 2 | * | 0 |
| ....CHLORELLA | -- | - | 150 | 1 | -- | - |
| ....CHODATELLA | -- | - | 180 | 1 | * | 0 |
| ....DICTYOSPHAERIUM | -- | - | -- | - | 710 | 1 |
| ....KIRCHNERIELLA | 64 | 1 | -- | - | -- | - |
| ....OOCYSTIS | -- | - | * | 0 | -- | - |
| ....SELENASTRUM | -- | - | 100 | 1 | -- | - |
| ....TETRAEDRON | -- | - | -- | - | * | 0 |
| ...SCENEDESMACEAE | | | | | | |
| ....ACTINASTRUM | -- | - | -- | - | 710 | 1 |
| ....CRUCIGENIA | -- | - | -- | - | 1100 | 1 |
| ....SCENEDESMUS | 260 | 5 | 500 | 4 | 1100 | 1 |
| ....TETRASTRUM | 130 | 3 | 200 | 1 | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | 550 | 4 | * | 0 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 2000# | 40 | 150 | 1 | * | 0 |
| ....MELOSIRA | 1500# | 29 | 480 | 3 | -- | - |
| ....STEPHANODISCUS | -- | - | * | 0 | -- | - |
| ..PENNALES | | | | | | |
| ...ACHNANTHACEAE | | | | | | |
| ....ACHNANTHES | -- | - | -- | - | * | 0 |
| ...FRAGILARIACEAE | | | | | | |
| ....SYNEDRA | -- | - | -- | - | * | 0 |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 32 | 1 | 250 | 2 | * | 0 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | -- | - | * | 0 | * | 0 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | 520 | 10 | 2900# | 21 | 1100 | 1 |
| ....ANACYSTIS | -- | - | 1400 | 10 | 20000# | 20 |
| ....COCCOCHLORIS | -- | - | 180 | 1 | -- | - |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENA | -- | - | 650 | 5 | 5300 | 5 |
| ....ANABAENOPSIS | -- | - | -- | - | 3800 | 4 |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | 1600 | 11 | 23000# | 23 |
| ....OSCILLATORIA | -- | - | 4200# | 30 | 41000# | 41 |
| ....PHORMIDIUM | -- | - | -- | - | 980 | 1 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....EUGLENA | -- | - | * | 0 | -- | - |
| ....TRACHELOMONAS | -- | - | -- | - | * | 0 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 08061000 EAST FORK TRINITY RIVER NEAR LAVON, TX

LOCATION.--Lat 33°01'25", long 96°28'31", Collin County, Hydrologic Unit 12030106, on left bank at downstream side of St. Louis Southwestern Railway Lines bridge, 150 ft (46 m) upstream from bridge on State Highway 78, 3,550 ft (1,082 m) downstream from Lavon Dam, 2.5 mi (4.0 km) west of Lavon, and 54.9 mi (88.3 km) upstream from mouth.

DRAINAGE AREA.--773 mi$^2$ (2,002 km$^2$).

PERIOD OF RECORD.--October 1953 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder, concrete control, and crest-stage gage. Datum of gage is 429.58 ft (130.936 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1969, at site 150 ft (46 m) downstream at same datum.

REMARKS.--Records fair. Flow is regulated by Lavon Lake (station 08060500). Several observations of water temperature were made during the year. Corps of Engineers gage-height telemeter at station.

AVERAGE DISCHARGE.--27 years, 331 ft$^3$/s (9.374 m$^3$/s), 239,800 acre-ft/yr (296 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,000 ft$^3$/s (1,100 m$^3$/s) May 26, 27, 1957, from records of released flow from Lavon Lake furnished by Corps of Engineers; maximum gage height, 17.34 ft (5.285 m) May 26, 1957; no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1894, 22.3 ft (6.80 m) in 1913 and in April 1942, from information by St. Louis Southwestern Railway Lines and local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 59.0 ft$^3$/s (1.67 m$^3$/s) Jan. 22 at 0630 hours, gage height, 9.64 ft (2.938 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | .00 | .03 | .36 | .52 | 1.0 | 1.3 | .06 | .01 | .68 | .00 | .00 |
| 2 | .00 | .00 | .06 | .36 | .32 | .91 | 1.1 | .10 | .00 | .33 | .00 | .03 |
| 3 | .00 | .00 | .14 | .56 | .36 | .47 | 1.2 | .16 | .00 | .22 | .00 | .03 |
| 4 | .35 | .00 | .21 | .56 | .36 | .40 | 1.2 | .24 | .00 | .16 | .00 | .07 |
| 5 | .01 | .00 | .21 | .36 | .36 | .70 | 1.1 | .42 | .00 | .16 | .00 | .11 |
| 6 | .00 | .00 | .05 | .22 | .36 | .83 | 1.1 | .69 | .00 | .16 | .00 | .01 |
| 7 | .00 | .00 | .03 | .22 | .43 | 2.8 | 1.1 | .54 | .00 | .16 | .00 | .01 |
| 8 | .00 | .00 | .03 | .22 | 3.5 | 1.3 | .74 | .41 | .00 | .03 | .00 | .05 |
| 9 | .00 | .00 | .08 | .22 | 1.5 | .15 | .49 | .39 | .00 | .03 | .00 | .14 |
| 10 | .00 | .00 | .11 | .22 | .56 | .69 | .51 | .21 | .00 | .18 | .00 | .24 |
| 11 | .00 | .00 | .11 | .22 | .56 | .17 | .56 | .34 | .00 | .13 | .00 | .16 |
| 12 | .00 | .00 | 2.0 | .22 | .49 | .22 | .31 | .74 | .00 | .07 | .00 | .09 |
| 13 | .00 | .00 | 1.2 | .22 | .36 | .57 | 3.5 | .54 | .00 | .06 | .00 | .03 |
| 14 | .00 | .00 | .56 | .22 | .36 | .54 | 2.4 | .44 | .00 | .03 | .00 | .03 |
| 15 | .00 | .00 | .56 | .22 | .22 | .41 | .36 | 2.9 | .00 | .03 | .00 | .03 |
| 16 | .00 | .01 | .36 | .22 | .68 | .70 | .36 | 1.8 | .00 | .03 | .00 | .03 |
| 17 | .01 | .02 | .22 | .22 | .74 | .85 | .52 | .28 | .00 | .02 | .00 | .01 |
| 18 | .01 | .00 | .36 | .22 | .50 | .60 | .56 | .12 | .00 | .01 | .00 | .01 |
| 19 | .01 | .00 | .36 | .22 | .36 | .63 | .56 | .08 | .00 | .01 | .00 | .00 |
| 20 | .00 | .00 | .36 | .82 | .36 | .69 | .56 | .06 | .61 | .01 | .42 | .00 |
| 21 | .00 | .00 | .36 | 6.9 | .36 | .48 | .56 | .02 | .00 | .00 | .10 | .00 |
| 22 | .00 | .00 | .56 | 18 | .36 | .13 | .56 | .12 | .39 | .00 | .23 | .00 |
| 23 | .00 | .01 | 7.8 | 4.4 | .36 | .25 | .84 | .36 | .00 | .00 | .14 | .00 |
| 24 | .00 | .02 | 2.0 | 2.0 | .36 | .21 | 1.8 | .15 | .00 | .00 | .01 | .00 |
| 25 | .00 | .06 | 1.2 | 1.5 | .28 | .21 | 5.0 | .36 | .00 | .00 | .00 | .09 |
| 26 | .00 | .05 | .82 | 1.2 | .16 | .30 | 1.4 | .23 | .00 | .00 | .23 | .34 |
| 27 | .00 | .09 | .82 | 1.4 | .19 | 1.9 | 1.1 | .19 | .00 | .00 | .56 | 1.4 |
| 28 | .00 | .04 | .56 | 1.2 | .21 | 3.5 | .76 | .13 | .00 | .00 | .11 | .65 |
| 29 | .00 | .00 | .36 | 1.2 | .23 | 1.6 | .46 | .31 | .00 | .00 | .07 | 6.4 |
| 30 | .00 | .00 | .82 | .64 | --- | .85 | .17 | .08 | 3.2 | .00 | .07 | .70 |
| 31 | .00 | --- | .56 | .73 | --- | .99 | --- | .05 | --- | .00 | .07 | --- |
| TOTAL | .39 | .30 | 22.90 | 45.27 | 15.41 | 25.05 | 32.18 | 12.52 | 4.21 | 2.51 | 2.01 | 10.66 |
| MEAN | .013 | .010 | .74 | 1.46 | .53 | .81 | 1.07 | .40 | .14 | .081 | .065 | .36 |
| MAX | .35 | .09 | 7.8 | 18 | 3.5 | 3.5 | 5.0 | 2.9 | 3.2 | .68 | .56 | 6.4 |
| MIN | .00 | .00 | .03 | .22 | .16 | .13 | .17 | .02 | .00 | .00 | .00 | .00 |
| AC-FT | .8 | .6 | 45 | 90 | 31 | 50 | 64 | 25 | 8.4 | 5.0 | 4.0 | 21 |

CAL YR 1979 TOTAL 52256.01 MEAN 143 MAX 2790 MIN .00 AC-FT 103600
WTR YR 1980 TOTAL 173.41 MEAN .47 MAX 18 MIN .00 AC-FT 344

## 08061540 ROWLETT CREEK NEAR SACHSE, TX

**LOCATION.**--Lat 32°57'35", long 96°36'51", Dallas County, Hydrologic Unit 12030106, on left bank at downstream side of bridge on State Highway 78, 150 ft (46 m) downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 250 ft (76 m) downstream from Spring Creek, and 1.5 mi (2.4 km) southwest of Sachse.

**DRAINAGE AREA.**--120 mi² (311 km²).

**PERIOD OF RECORD.**--March 1968 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 450.00 ft (137.160 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Records good except those for period Oct. 1 to Nov. 12, which are fair. No known diversions above station. The North Texas Municipal Water District reported that they returned 8,350 acre-ft (10.3 hm³) of sewage effluent into a tributary above station. The city of Dallas maintains a rain gage and a gage-height telemeter at station. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--12 years (water years 1969-80), 78.5 ft³/s (2.223 m³/s), 56,870 acre-ft (70.1 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 29,500 ft³/s (835 m³/s) Mar. 27, 1977, gage height, 29.31 ft (8.934 m); no flow Aug. 24 to Sept. 2, 1969.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since at least 1942, 35.4 ft (10.79 m) in 1942, from information by State Department of Highways and Public Transportation.

**EXTREMES FOR CURRENT YEAR.**--Peak discharges above base of 2,000 ft³/s (56.6 m³/s) and maximum (*):

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| Jan. 22 | 0945 | *2,610 | 73.9 | 18.81 | 5.733 |
| May 15 | 1815 | 2,020 | 57.2 | 17.07 | 5.203 |
| Sept. 29 | 1100 | 2,020 | 57.2 | 17.07 | 5.203 |

Minimum discharge, 1.1 ft³/s (0.031 m³/s) Aug. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10 | 52 | 15 | 19 | 41 | 39 | 27 | 24 | 19 | 10 | 6.8 | 6.2 |
| 2 | 11 | 14 | 16 | 23 | 44 | 38 | 27 | 48 | 20 | 9.3 | 6.5 | 8.7 |
| 3 | 10 | 10 | 16 | 22 | 40 | 36 | 24 | 25 | 17 | 11 | 7.8 | 7.2 |
| 4 | 10 | 12 | 17 | 21 | 39 | 34 | 22 | 21 | 15 | 11 | 7.5 | 7.0 |
| 5 | 10 | 10 | 16 | 22 | 36 | 33 | 21 | 20 | 14 | 9.7 | 7.8 | 7.4 |
| 6 | 9.2 | 13 | 16 | 23 | 33 | 31 | 23 | 18 | 14 | 8.5 | 8.4 | 6.4 |
| 7 | 8.8 | 12 | 15 | 23 | 37 | 30 | 25 | 17 | 13 | 11 | 7.7 | 7.4 |
| 8 | 9.2 | 11 | 14 | 21 | 310 | 29 | 19 | 29 | 14 | 10 | 7.6 | 8.0 |
| 9 | 11 | 101 | 13 | 21 | 147 | 28 | 20 | 23 | 16 | 9.8 | 6.0 | 7.5 |
| 10 | 9.6 | 51 | 16 | 22 | 131 | 27 | 19 | 18 | 13 | 8.5 | 8.2 | 8.5 |
| 11 | 6.9 | 14 | 15 | 23 | 114 | 32 | 19 | 15 | 13 | 9.9 | 7.7 | 6.0 |
| 12 | 6.9 | 13 | 175 | 21 | 90 | 58 | 18 | 23 | 13 | 10 | 7.6 | 8.0 |
| 13 | 5.8 | 12 | 79 | 22 | 78 | 34 | 276 | 23 | 14 | 8.3 | 7.3 | 8.4 |
| 14 | 6.2 | 12 | 30 | 23 | 73 | 30 | 64 | 18 | 12 | 9.3 | 7.6 | 7.9 |
| 15 | 27 | 11 | 21 | 23 | 71 | 29 | 27 | 652 | 12 | 9.7 | 6.9 | 8.3 |
| 16 | 22 | 11 | 15 | 23 | 70 | 34 | 23 | 230 | 11 | 9.3 | 7.2 | 6.8 |
| 17 | 11 | 12 | 15 | 21 | 73 | 36 | 19 | 70 | 12 | 8.9 | 8.1 | 7.6 |
| 18 | 7.7 | 11 | 14 | 22 | 70 | 30 | 15 | 52 | 12 | 8.5 | 8.3 | 11 |
| 19 | 8.4 | 12 | 15 | 23 | 71 | 30 | 14 | 48 | 12 | 10 | 7.2 | 8.0 |
| 20 | 8.0 | 13 | 19 | 57 | 70 | 31 | 16 | 38 | 658 | 11 | 6.8 | 5.1 |
| 21 | 9.2 | 23 | 22 | 258 | 57 | 30 | 16 | 34 | 123 | 13 | 6.4 | 10 |
| 22 | 31 | 19 | 57 | 901 | 52 | 30 | 13 | 33 | 64 | 11 | 7.8 | 9.4 |
| 23 | 11 | 15 | 518 | 112 | 48 | 45 | 13 | 32 | 45 | 9.6 | 6.7 | 9.7 |
| 24 | 8.0 | 12 | 104 | 62 | 45 | 42 | 12 | 29 | 20 | 8.3 | 6.5 | 9.2 |
| 25 | 10 | 11 | 33 | 49 | 45 | 30 | 288 | 27 | 14 | 8.9 | 8.4 | 62 |
| 26 | 10 | 11 | 24 | 43 | 46 | 30 | 86 | 26 | 12 | 6.9 | 8.1 | 41 |
| 27 | 10 | 14 | 20 | 39 | 43 | 45 | 28 | 24 | 12 | 8.0 | 7.5 | 207 |
| 28 | 11 | 12 | 18 | 37 | 41 | 164 | 22 | 21 | 11 | 8.2 | 8.1 | 137 |
| 29 | 11 | 14 | 17 | 72 | 41 | 62 | 18 | 21 | 7.8 | 7.6 | 9.7 | 959 |
| 30 | 271 | 15 | 16 | 53 | --- | 38 | 24 | 23 | 9.6 | 8.1 | 8.8 | 114 |
| 31 | 150 | --- | 16 | 50 | --- | 29 | --- | 20 | --- | 6.5 | 9.0 | --- |
| TOTAL | 740.9 | 553 | 1397 | 2151 | 2056 | 1214 | 1238 | 1702 | 1242.4 | 289.8 | 236.0 | 1709.7 |
| MEAN | 23.9 | 18.4 | 45.1 | 69.4 | 70.9 | 39.2 | 41.3 | 54.9 | 41.4 | 9.35 | 7.61 | 57.0 |
| MAX | 271 | 101 | 518 | 901 | 310 | 164 | 288 | 652 | 658 | 13 | 9.7 | 959 |
| MIN | 5.8 | 10 | 13 | 19 | 33 | 27 | 12 | 15 | 7.8 | 6.5 | 6.0 | 5.1 |
| AC-FT | 1470 | 1100 | 2770 | 4270 | 4080 | 2410 | 2460 | 3380 | 2460 | 575 | 468 | 3390 |

CAL YR 1979 TOTAL 36512.5 MEAN 100 MAX 3770 MIN 3.8 AC-FT 72420
WTR YR 1980 TOTAL 14529.8 MEAN 39.7 MAX 959 MIN 5.1 AC-FT 28820

## 08061550 LAKE RAY HUBBARD NEAR FORNEY, TX

LOCATION.--Lat 32°48'00", long 96°29'45", Kaufman County, Hydrologic Unit 12030106, near right end of spillway in Forney Dam on East Fork Trinity River, 0.5 mi (0.8 km) upstream from Duck Creek, 1.8 mi (2.9 km) upstream from bridge on Interstate Highway 20, 3.8 mi (6.1 km) northwest of Forney, 24 mi (39 km) downstream from Lavon Dam, and 31.8 mi (51.2 km) upstream from mouth.

DRAINAGE AREA.--1,071 mi$^2$ (2,774 km$^2$).

PERIOD OF RECORD.--January 1968 to current year.
Water-quality records: Chemical analyses: October 1969 to September 1979.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam 12,500 ft (3,810 m) long, including a 664-foot (202 m) gated spillway with fourteen 40- by 28-foot (12 by 9 m) tainter gates. Closure was made in September 1967, but the gates were not closed until Mar. 22, 1970. Low-flow releases are made through three 4.5- by 6.75-foot (1.4 by 2.06 m) sluiceways. Flow in each sluiceway is controlled by three sluice gates. The lake was built by the city of Dallas for municipal water supply. During the current year, records furnished by the city of Dallas show that they diverted 80,630 acre-ft (99.4 hm$^3$) from the lake for municipal use, 2,450 acre-ft (3.02 hm$^3$) was diverted for consumptive cooling by the Dallas Power and Light Co. electric generating plant, and 106 acre-ft (131,000 m$^3$) was diverted for irrigation by the Eastern Hills Country Club of Garland. The North Texas Municipal Water District reported 9,420 acre-ft (11.6 hm$^3$) of sewage effluent returned to lake. Flow is affected at times by discharge from the flood-detention pools of 14 floodwater-retarding structures with a combined detention capacity of 14,470 acre-ft (17.8 hm$^3$). These structures control runoff from 44.5 mi$^2$ (115.3 km$^2$) above this station and below Lavon Lake station (08060500). City of Dallas gage-height telemeter at station. The area and capacity tables are based on surveys made in 1953 and 1959. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam...................................................... | 450.0 | - |
| Design flood.................................................... | 440.5 | 611,500 |
| Top of tainter gates............................................ | 437.5 | 536,700 |
| Top of conservation pool........................................ | 435.5 | 489,900 |
| Crest of spillway (sill of tainter gates)....................... | 409.5 | 83,130 |
| Lowest gated outlet (invert).................................... | 388.0 | 80 |

COOPERATION.--Record of diversions were furnished by the city of Dallas. The area and capacity tables were furnished by Forrest and Cotton, Consulting Engineers for the city of Dallas.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 500,900 acre-ft (618 hm$^3$) June 4, 1973, elevation, 435.98 ft (132.887 m); minimum since first appreciable filling following closure of gates on Mar. 22, 1970, 326,600 acre-ft (403 hm$^3$) Sept. 29, 30, 1978, elevation, 427.48 ft (130.296 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 468,800 acre-ft (578 hm$^3$) Feb. 16 at 1200 hours, elevation, 434.56 ft (132.454 m); minimum 359,600 acre-ft (443 hm$^3$) Sept. 26, elevation, 429.26 ft (130.838 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 429.0 | 354,700 | 434.0 | 456,500 |
| 431.0 | 393,700 | 435.0 | 478,600 |
| 433.0 | 435,000 | | |

### CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 456700 | 450200 | 444600 | 450400 | 460900 | 462400 | 453200 | 451100 | 445200 | 432200 | 408500 | 379000 |
| 2 | 455200 | 449300 | 443700 | 451100 | 460700 | 458900 | 453200 | 451100 | 444600 | 431100 | 407200 | 378800 |
| 3 | 455800 | 448900 | 443300 | 450600 | 460900 | 457200 | 453400 | 450400 | 444100 | 430700 | 405800 | 378200 |
| 4 | 454300 | 448500 | 443300 | 450800 | 460700 | 461500 | 452400 | 450000 | 443300 | 429700 | 405200 | 377600 |
| 5 | 453700 | 450400 | 448000 | 450200 | 460700 | 458900 | 451500 | 449500 | 442400 | 429000 | 404400 | 376800 |
| 6 | 453700 | 448200 | 443100 | 454100 | 460200 | 457600 | 450800 | 450000 | 441600 | 428400 | 404400 | 376000 |
| 7 | 452400 | 447800 | 443300 | 450600 | 460900 | 458000 | 457200 | 450000 | 442000 | 427800 | 403800 | 375500 |
| 8 | 452100 | 446900 | 442900 | 449800 | 466200 | 458000 | 450800 | 449300 | 442200 | 426700 | 403400 | 375500 |
| 9 | 453200 | 448500 | 442600 | 449300 | 464800 | 457600 | 450200 | 447800 | 441800 | 425900 | 402700 | 375100 |
| 10 | 450800 | 448500 | 441600 | 450000 | 464200 | 457600 | 448500 | 447400 | 440300 | 425000 | 401900 | 374100 |
| 11 | 451100 | 447400 | 445000 | 450400 | 464800 | 458000 | 453400 | 446500 | 439600 | 424000 | 401700 | 372900 |
| 12 | 451100 | 447600 | 446300 | 448900 | 464200 | 459100 | 452100 | 446500 | 438600 | 423200 | 401100 | 372100 |
| 13 | 450400 | 446900 | 445400 | 449500 | 464000 | 456900 | 452600 | 446900 | 436800 | 422300 | 400100 | 371000 |
| 14 | 449500 | 446700 | 445000 | 449300 | 463700 | 456100 | 452600 | 447600 | 435800 | 421300 | 393300 | 370400 |
| 15 | 450000 | 446500 | 444400 | 449500 | 467500 | 455000 | 452400 | 453000 | 435400 | 420400 | 392300 | 369200 |
| 16 | 450000 | 446700 | 447200 | 450000 | 465900 | 455600 | 451300 | 453900 | 434700 | 419600 | 391900 | 369000 |
| 17 | 450000 | 446500 | 443900 | 450000 | 464200 | 455600 | 452100 | 453400 | 434100 | 418800 | 391100 | 367700 |
| 18 | 449800 | 446100 | 443500 | 449500 | 462200 | 454800 | 451500 | 455400 | 433100 | 418200 | 390100 | 366500 |
| 19 | 448700 | 446500 | 443700 | 450200 | 464000 | 454800 | 451100 | 453400 | 432400 | 417300 | 388900 | 365600 |
| 20 | 448500 | 446300 | 443900 | 451100 | 463500 | 454300 | 450600 | 453200 | 437700 | 416700 | 388300 | 364200 |
| 21 | 448900 | 449100 | 445000 | 454500 | 463300 | 453700 | 450200 | 452800 | 437700 | 415500 | 388100 | 362500 |
| 22 | 450000 | 446900 | 445200 | 461300 | 463100 | 452800 | 450000 | 451700 | 438800 | 415900 | 387100 | 362500 |
| 23 | 449300 | 445400 | 450800 | 460400 | 463300 | 455200 | 449100 | 451100 | 438300 | 414600 | 386100 | 362300 |
| 24 | 449100 | 446100 | 451100 | 460000 | 463100 | 454100 | 450800 | 450200 | 437500 | 414000 | 385300 | 361100 |
| 25 | 448700 | 446500 | 450400 | 461300 | 463100 | 453200 | 453900 | 450400 | 436800 | 413000 | 384500 | 361000 |
| 26 | 447200 | 444800 | 450600 | 462600 | 461300 | 452600 | 452600 | 450200 | 436200 | 412400 | 383700 | 361700 |
| 27 | 447800 | 446900 | 450600 | 461300 | 461100 | 454300 | 452400 | 449800 | 435000 | 411300 | 383100 | 361900 |
| 28 | 448200 | 445400 | 451300 | 461300 | 460900 | 454100 | 451500 | 448900 | 434300 | 411300 | 382700 | 361700 |
| 29 | 445200 | 444800 | 451500 | 462200 | 465300 | 454100 | 451100 | 447800 | 433700 | 411100 | 381900 | 371200 |
| 30 | 450000 | 443900 | 451300 | 465100 | --- | 454100 | 450800 | 447400 | 432800 | 410300 | 380900 | 370800 |
| 31 | 450400 | --- | 451100 | 462400 | --- | 452800 | --- | 445400 | --- | 409500 | 380200 | --- |
| MAX | 456700 | 450400 | 451500 | 465100 | 467500 | 462400 | 457200 | 455400 | 445200 | 432200 | 408500 | 379000 |
| MIN | 445200 | 443900 | 441600 | 448900 | 460200 | 452600 | 448500 | 445400 | 432400 | 409500 | 380200 | 361000 |
| (†) | 433.72 | 433.42 | 433.75 | 434.27 | 434.40 | 433.83 | 433.74 | 433.39 | 432.90 | 431.78 | 430.32 | 429.84 |
| (‡) | -6100 | -6500 | +7200 | +11300 | +2900 | -12500 | -2000 | -5400 | -12600 | -23300 | -29300 | -9400 |
| (††) | 971 | 165 | 361 | 1770 | 8120 | 7080 | 6820 | 10870 | 10020 | 12440 | 10870 | 13700 |

CAL YR 1979 MAX 492400 MIN 317100 ‡ +131500 †† 32920
WTR YR 1980 MAX 467500 MIN 361000 ‡ -85700 †† 83190

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal, irrigation, and industrial use.

## 08061700 DUCK CREEK NEAR GARLAND, TX

LOCATION.--Lat 32°49'58", long 96°35'43", Dallas County, Hydrologic Unit 12030106, on right bank in the median area between the dual bridges on Belt Line Road, 6.0 mi (9.7 km) southeast of Garland, and 7.7 mi (12.4 km) upstream from mouth.

DRAINAGE AREA.--31.6 mi$^2$ (81.8 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1958 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 430.02 ft (131.070 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1962, at datum 4.00 ft (1.219 m) higher.

REMARKS.--Water-discharge records good. Flow slightly regulated by several small on-channel dams. Small diversions for irrigation of golf course above station. Low flows may be sustained by effluents from city of Garland. A recording rain gage is located at station.

AVERAGE DISCHARGE.--22 years, 26.9 ft$^3$/s (0.762 m$^3$/s), 11.56 in/yr (294 mm/yr), 19,490 acre-ft/yr (24.0 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft$^3$/s (453 m$^3$/s) July 27, 1962, gage height, 20.80 ft (6.340 m), present datum; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1895, 21.5 ft (6.55 m), present datum, June 13, 1949, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft$^3$/s (56.6 m$^3$/s) and maximum (*):

| Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| Mar. 15 | 1600 | 2,750 | 77.9 | 16.03 | 4.886 |
| Sept. 29 | 0830 | *3,980 | 113 | 16.75 | 5.105 |

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.7 | 5.2 | .64 | 3.1 | 20 | 9.9 | 11 | 3.4 | 5.0 | .18 | .67 | .11 |
| 2 | .92 | 3.2 | .88 | 2.9 | 4.1 | 8.3 | 6.0 | 63 | 4.6 | .13 | 2.1 | .01 |
| 3 | .25 | 2.4 | .98 | 2.7 | 4.0 | 7.5 | 4.5 | 5.4 | 4.5 | .09 | 1.1 | .00 |
| 4 | .02 | 1.9 | .74 | 2.1 | 4.0 | 7.9 | 4.9 | 4.1 | 4.7 | .06 | .18 | .00 |
| 5 | .02 | 1.5 | .69 | 1.9 | 3.9 | 7.5 | 5.2 | 3.7 | 4.7 | .04 | .03 | .00 |
| 6 | .12 | 1.2 | .72 | 1.7 | 3.6 | 6.2 | 5.1 | 16 | 4.2 | .04 | .00 | .00 |
| 7 | .02 | 1.0 | .64 | 1.7 | 5.9 | 5.9 | 5.0 | 9.5 | 4.2 | .02 | .00 | .00 |
| 8 | 1.6 | .79 | .71 | 1.6 | 314 | 5.9 | 5.6 | 14 | 3.5 | .02 | .18 | .00 |
| 9 | .82 | 32 | .74 | 1.6 | 47 | 6.2 | 6.2 | 8.6 | 2.9 | .02 | 1.0 | 3.0 |
| 10 | .28 | 4.1 | 1.1 | 1.5 | 54 | 6.2 | 5.4 | 3.8 | 2.2 | .01 | .57 | 15 |
| 11 | .03 | 1.8 | 1.7 | 1.5 | 28 | 6.2 | 5.6 | 2.8 | 1.7 | .00 | .14 | 6.0 |
| 12 | .00 | 1.4 | 212 | 1.5 | 15 | 6.5 | 9.0 | 14 | 1.2 | .00 | .00 | 2.6 |
| 13 | .00 | 2.1 | 19 | 1.5 | 11 | 6.2 | 270 | 7.4 | .84 | .00 | 3.0 | .79 |
| 14 | .00 | 1.4 | 5.4 | 1.5 | 10 | 5.0 | 70 | 3.7 | .48 | .00 | 4.6 | .04 |
| 15 | 10 | 1.4 | 2.9 | 1.4 | 9.5 | 4.5 | 15 | 1020 | .23 | .00 | 1.3 | .01 |
| 16 | 21 | 2.1 | 2.4 | 1.4 | 14 | 4.5 | 4.8 | 139 | .06 | .00 | 1.0 | .01 |
| 17 | 4.0 | 1.7 | 2.1 | 1.4 | 16 | 5.0 | 4.4 | 16 | .01 | .00 | .87 | .00 |
| 18 | 1.6 | 1.4 | 1.3 | 1.4 | 10 | 4.5 | 3.9 | 12 | .01 | .00 | .06 | .00 |
| 19 | .59 | 1.6 | 1.5 | 1.4 | 9.5 | 4.2 | 3.5 | 11 | .01 | .00 | 1.1 | 9.8 |
| 20 | .32 | .59 | 1.5 | 1.6 | 9.1 | 4.2 | 3.7 | 11 | 375 | .00 | 2.4 | 7.2 |
| 21 | .08 | 11 | 2.0 | 15 | 9.1 | 4.2 | 4.1 | 9.0 | 13 | 53 | 3.1 | 3.5 |
| 22 | 25 | 6.3 | 48 | 400 | 9.1 | 5.0 | 2.5 | 7.7 | 100 | 12 | 3.0 | 1.0 |
| 23 | 4.8 | 2.6 | 594 | 1000 | 8.7 | 19 | 2.1 | 6.4 | 12 | 3.1 | 3.0 | .03 |
| 24 | 1.9 | 1.5 | 23 | 140 | 8.7 | 14 | 12 | 6.1 | 4.1 | 1.2 | 1.8 | .00 |
| 25 | .83 | 1.1 | 7.3 | 69 | 7.2 | 5.3 | 259 | 6.4 | 3.1 | .25 | .38 | 71 |
| 26 | .32 | 1.6 | 7.1 | 52 | 7.2 | 5.3 | 37 | 5.1 | 2.2 | .04 | .01 | 40 |
| 27 | .07 | .59 | 5.6 | 38 | 6.8 | 28 | 8.5 | 5.1 | 1.4 | .01 | 1.6 | 175 |
| 28 | .02 | .20 | 4.8 | 37 | 7.5 | 599 | 5.3 | 4.9 | .74 | .00 | 2.5 | 96 |
| 29 | .01 | .22 | 4.3 | 37 | 9.1 | 150 | 4.3 | 5.0 | .48 | .00 | 7.3 | 1490 |
| 30 | 259 | .49 | 3.9 | 78 | --- | 50 | 3.6 | 4.3 | .30 | .00 | 3.5 | 50 |
| 31 | 19 | --- | 3.3 | 52 | --- | 20 | --- | 4.6 | --- | .00 | 1.9 | --- |
| TOTAL | 354.32 | 94.38 | 960.94 | 1953.4 | 666.0 | 1022.1 | 787.2 | 1433.0 | 557.36 | 70.21 | 48.39 | 1971.10 |
| MEAN | 11.4 | 3.15 | 31.0 | 63.0 | 23.0 | 33.0 | 26.2 | 46.2 | 18.6 | 2.26 | 1.56 | 65.7 |
| MAX | 259 | 32 | 594 | 1000 | 314 | 599 | 270 | 1020 | 375 | 53 | 7.3 | 1490 |
| MIN | .00 | .20 | .64 | 1.4 | 3.6 | 4.2 | 2.1 | 2.8 | .01 | .00 | .00 | .00 |
| CFSM | .36 | .10 | .98 | 1.99 | .73 | 1.04 | .83 | 1.46 | .59 | .07 | .05 | 2.08 |
| IN. | .42 | .11 | 1.13 | 2.30 | .78 | 1.20 | .93 | 1.69 | .66 | .08 | .06 | 2.32 |
| AC-FT | 703 | 187 | 1910 | 3870 | 1320 | 2030 | 1560 | 2840 | 1110 | 139 | 96 | 3910 |
| (††) | 1.57 | .12 | 2.62 | 2.53 | .74 | .83 | 2.13 | 3.13 | 1.76 | .75 | .14 | 5.18 |

CAL YR 1979 TOTAL 15914.36 MEAN 43.6 MAX 2290 MIN .00 CFSM 1.38 IN 18.73 AC-FT 31570 †† -
WTR YR 1980 TOTAL 9918.40 MEAN 27.1 MAX 1490 MIN .00 CFSM .86 IN 11.68 AC-FT 19670 †† 21.50

†† Weighted-mean rainfall, in inches.

## 08061700 DUCK CREEK NEAR GARLAND, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Sediment records: October 1976 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | TEMPER-ATURE, WATER (DEG C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) |
|---|---|---|---|---|---|
| MAY | | | | | |
| 16... | 1015 | 64 | 19.0 | 28 | 4.9 |

## 08061750 EAST FORK TRINITY RIVER NEAR FORNEY, TX

**LOCATION.**--Lat 32°46'27", long 96°30'12", Kaufman County, Hydrologic Unit 12030106, on right bank 25 ft (8 m) downstream from bridge on Interstate Highway 20, 0.2 mi (0.3 km) downstream from Duck Creek, 1.9 mi (3.1 km) downstream from Lake Ray Hubbard Dam, 2.5 mi (4.0 km) upstream from Texas and Pacific Railroad Co. bridge, 2.6 mi (4.2 km) northwest of Forney, and 30.8 mi (49.6 km) upstream from mouth.

**DRAINAGE AREA.**--1,118 mi$^2$ (2,896 km$^2$), of which 1,071 mi$^2$ (2,774 km$^2$) is above Lake Ray Hubbard. Prior to May 12, 1977, 105 ft (32 m) downstream.

**PERIOD OF RECORD.**--January 1973 to current year.

**GAGE.**--Water-stage recorder and crest-stage gage. Datum of gage is 377.86 ft (115.17 m) National Geodetic Vertical Datum of 1929 (from State Department of Highways and Public Transportation bridge plans). Prior to Aug. 26, 1975, recording gage at same datum located at site 126 ft (38 m) downstream (corrected) and 868 ft (265 m) to left.

**REMARKS.**--Records good. Flow is regulated by Lake Ray Hubbard (station 08061550). Low flow is sustained by sewage effluent from the city of Garland. Records furnished by the city of Garland show that 17,250 acre-ft (21.3 hm$^3$) of sewage effluent was discharged into Duck Creek which enters East Fork Trinity River 0.2 mi (0.3 km) upstream from this station. The city of Dallas maintains a gage-height telemeter at this station. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--7 years (water years 1974-80), 449 ft$^3$/s (12.72 m$^3$/s), 325,300 acre-ft/yr (401 hm$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 30,400 ft$^3$/s (861 m$^3$/s) Mar. 27, 1977, gage height, 16.34 ft (4.980 m); minimum daily, 13 ft$^3$/s (0.37 m$^3$/s) Oct. 18, 1977.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 2,380 ft$^3$/s (67.4 m$^3$/s) May 16 at 0600 hours, gage height, 9.62 ft (2.932 m); minimum daily, 17 ft$^3$/s (0.48 m$^3$/s) June 16, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 | 43 | 22 | 22 | 39 | 68 | 27 | 27 | 24 | 25 | 24 | 22 |
| 2 | 19 | 30 | 20 | 23 | 34 | 30 | 26 | 73 | 20 | 21 | 22 | 21 |
| 3 | 22 | 26 | 22 | 27 | 32 | 25 | 28 | 38 | 18 | 22 | 19 | 27 |
| 4 | 19 | 23 | 22 | 25 | 34 | 29 | 24 | 27 | 20 | 25 | 19 | 27 |
| 5 | 20 | 24 | 24 | 23 | 31 | 28 | 21 | 22 | 25 | 20 | 21 | 27 |
| 6 | 21 | 25 | 26 | 27 | 31 | 27 | 19 | 22 | 21 | 19 | 23 | 24 |
| 7 | 19 | 22 | 22 | 20 | 30 | 25 | 20 | 57 | 22 | 19 | 23 | 23 |
| 8 | 19 | 24 | 20 | 23 | 235 | 26 | 26 | 35 | 22 | 20 | 23 | 25 |
| 9 | 21 | 40 | 19 | 25 | 252 | 24 | 24 | 45 | 18 | 24 | 23 | 23 |
| 10 | 23 | 47 | 22 | 24 | 93 | 23 | 22 | 28 | 21 | 24 | 24 | 26 |
| 11 | 23 | 28 | 24 | 23 | 108 | 23 | 24 | 25 | 22 | 20 | 23 | 26 |
| 12 | 20 | 26 | 77 | 20 | 65 | 24 | 26 | 25 | 21 | 21 | 22 | 25 |
| 13 | 18 | 27 | 189 | 21 | 53 | 26 | 387 | 49 | 21 | 23 | 21 | 24 |
| 14 | 19 | 27 | 48 | 22 | 47 | 25 | 242 | 32 | 23 | 22 | 23 | 24 |
| 15 | 20 | 23 | 32 | 21 | 44 | 22 | 51 | 322 | 20 | 26 | 24 | 25 |
| 16 | 46 | 22 | 29 | 23 | 48 | 22 | 34 | 1250 | 17 | 25 | 24 | 25 |
| 17 | 37 | 21 | 20 | 23 | 50 | 27 | 30 | 116 | 17 | 26 | 24 | 25 |
| 18 | 28 | 22 | 21 | 26 | 43 | 21 | 31 | 57 | 20 | 24 | 23 | 28 |
| 19 | 24 | 25 | 20 | 21 | 41 | 20 | 30 | 39 | 21 | 22 | 23 | 31 |
| 20 | 22 | 30 | 21 | 58 | 47 | 24 | 25 | 40 | 219 | 21 | 23 | 26 |
| 21 | 21 | 26 | 22 | 207 | 36 | 23 | 23 | 39 | 212 | 19 | 24 | 23 |
| 22 | 37 | 32 | 60 | 1020 | 34 | 22 | 23 | 33 | 61 | 31 | 25 | 25 |
| 23 | 42 | 28 | 316 | 254 | 32 | 23 | 22 | 29 | 102 | 31 | 25 | 26 |
| 24 | 25 | 24 | 371 | 65 | 29 | 48 | 25 | 28 | 39 | 25 | 23 | 27 |
| 25 | 21 | 21 | 52 | 48 | 29 | 25 | 185 | 24 | 31 | 23 | 23 | 27 |
| 26 | 19 | 19 | 31 | 39 | 32 | 21 | 200 | 23 | 27 | 22 | 23 | 71 |
| 27 | 19 | 22 | 32 | 36 | 30 | 26 | 45 | 24 | 35 | 24 | 23 | 134 |
| 28 | 19 | 23 | 30 | 34 | 30 | 195 | 29 | 24 | 25 | 23 | 24 | 134 |
| 29 | 21 | 23 | 27 | 59 | 31 | 70 | 31 | 23 | 24 | 20 | 25 | 924 |
| 30 | 69 | 23 | 25 | 55 | --- | 50 | 30 | 23 | 23 | 22 | 25 | 618 |
| 31 | 247 | --- | 23 | 43 | --- | 26 | --- | 24 | --- | 24 | 24 | --- |
| TOTAL | 1000 | 796 | 1689 | 2357 | 1640 | 1068 | 1730 | 2623 | 1191 | 713 | 715 | 2513 |
| MEAN | 32.3 | 26.5 | 54.5 | 76.0 | 56.6 | 34.5 | 57.7 | 84.6 | 39.7 | 23.0 | 23.1 | 83.8 |
| MAX | 247 | 47 | 371 | 1020 | 252 | 195 | 387 | 1250 | 219 | 31 | 25 | 924 |
| MIN | 18 | 19 | 19 | 20 | 29 | 20 | 19 | 22 | 17 | 19 | 19 | 21 |
| AC-FT | 1980 | 1580 | 3350 | 4680 | 3250 | 2120 | 3430 | 5200 | 2360 | 1410 | 1420 | 4980 |

CAL YR 1979 TOTAL 74195.0 MEAN 203 MAX 3420 MIN 8.0 AC-FT 147200
WTR YR 1980 TOTAL 18035.0 MEAN 49.3 MAX 1250 MIN 17 AC-FT 35770

## 08061950 SOUTH MESQUITE CREEK AT MERCURY ROAD NEAR MESQUITE, TX

LOCATION.--Lat 32°43'32", long 96°34'12", Dallas County, Hydrologic Unit 12030106, on left bank at downstream side of bridge on Mercury Road, 3.3 mi (5.3 km) southeast of Mesquite, and 3.6 mi (5.8 km) upstream from mouth.

DRAINAGE AREA.--23.0 $mi^2$ (59.6 $km^2$).

PERIOD OF RECORD.--October 1968 to September 1979 (discontinued).

REVISED RECORDS.--WRD TX-74-1: 1972(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 389.91 ft (118.845 m) National Geodetic Vertical Datum of 1929.

REVISIONS.--Revised peak discharges and revised daily discharges for water years 1969-70, in cubic feet per second, for high-water periods in these years are given below. These figures supersede those published in WSP 2122 and in the reports for 1969-70.

| Date | Discharge ($ft^3/s$) | Discharge ($m^3/s$) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|
| May 5, 1969 | 2,980 | 84.4 | 10.15 | 3.094 |
| May 7, 1969 | 8,080 | 229 | 12.06 | 2.676 |
| Feb. 6, 1970 | 1,690 | 47.9 | 9.25 | 2.819 |
| Feb. 24, 1970 | 1,200 | 34.0 | 8.75 | 2.667 |
| Feb. 28, 1970 | 1,540 | 43.6 | 9.11 | 2.777 |
| Apr. 25, 1970 | 2,130 | 60.3 | 9.40 | 2.865 |
| May 31, 1970 | 2,160 | 61.2 | 9.44 | 2.877 |

| | | | | | |
|---|---|---|---|---|---|
| May 5, 1969 | 934 | May 9, 1969 | 52 | Apr. 26, 1970 | 310 |
| 6 | 65 | Feb. 6, 1970 | 513 | May 30 | 158 |
| 7 | 2,190 | Feb. 7 | 123 | May 31 | 825 |
| 8 | 144 | Apr. 25 | 537 | June 1 | 129 |

| MONTH | TOTAL | MEAN | MAX | MIN | CFSM | IN | AC-FT |
|---|---|---|---|---|---|---|---|
| May 1969 | 3713.85 | 230 | 2190 | 0.37 | 5.22 | 6.01 | 7370 |
| WTR YR 1969 | 7063.00 | 19.4 | 2190 | 0 | .84 | 11.42 | 14210 |
| CAL YR 1969 | 7820.32 | 21.4 | 2190 | 0 | .93 | 12.65 | 15510 |
| February 1970 | 2620.32 | 93.6 | 626 | 1.7 | 4.07 | 4.25 | 5200 |
| April | 1121.90 | 37.4 | 537 | .90 | 1.63 | 1.81 | 2230 |
| May | 1366.75 | 44.1 | 825 | .06 | 1.92 | 2.21 | 2710 |
| June | 152.16 | 5.07 | 129 | 0 | .22 | .25 | 302 |
| WTR YR 1970 | 8820.59 | 24.2 | 825 | 0 | 1.05 | 14.26 | 17500 |
| CAL YR 1970 | 8366.22 | 22.9 | 825 | 0 | 1.00 | 13.50 | 16590 |

## 08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX

LOCATION.--Lat 32°38'19", long 96°29'17", Kaufman County, Hydrologic Unit 12030106, on right bank 15 ft (5 m) downstream from downstream eastbound bridge on U.S. Highway 175, 0.7 mi (1.1 km) downstream from Mustang Creek, 1.8 mi (2.9 km) northwest of Crandall, 4.0 mi (6.4 km) upstream from Buffalo Creek, and 11.0 mi (17.7 km) upstream from mouth.

DRAINAGE AREA.--1,256 $mi^2$ (3,253 $km^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1949 to current year.

REVISED RECORDS.--WSP 1922: Drainage area. WDR TX-75-1: 1974.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 343.69 ft (104.757 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow largely regulated by Lavon Lake (station 08060500) since September 1953 and Lake Ray Hubbard (station 08061550) since Mar. 22, 1970. Records furnished by the city of Forney show that 185 acre-ft (228,000 $m^3$) of sewage effluent was returned to a tributary below Lake Ray Hubbard and above this station. Records furnished by the North Texas Municipal Water District show that 7,550 acre-ft (9.31 $hm^3$) of sewage effluent was returned to tributaries above station from the Mesquite and Chandler's Landing sewage treatment plants. National Weather Service gage-height telemeter located at station.

AVERAGE DISCHARGE.--4 years (water years 1950-53) prior to regulation by Lavon Lake, 652 $ft^3/s$ (18.46 $m^3/s$), 472,400 acre-ft/yr (582 $hm^3/yr$); 27 years (water years 1954-80) regulated, 560 $ft^3/s$ (15.86 $m^3/s$), 405,700 acre-ft/yr (500 $hm^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 $ft^3/s$ (935 $m^3/s$), May 28, 1957, gage height, 22.81 ft (6.952 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,690 $ft^3/s$ (47.9 $m^3/s$) May 17 at 0330 hours, gage height, 13.27 ft (4.045 m); minimum daily, 34 $ft^3/s$ (0.96 $m^3/s$) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 34 | 140 | 45 | 52 | 99 | 70 | 75 | 79 | 59 | 49 | 46 | 58 |
| 2 | 35 | 55 | 44 | 48 | 87 | 150 | 73 | 84 | 59 | 51 | 46 | 55 |
| 3 | 35 | 44 | 45 | 45 | 80 | 129 | 72 | 149 | 54 | 49 | 42 | 55 |
| 4 | 38 | 39 | 47 | 44 | 77 | 68 | 72 | 94 | 52 | 50 | 39 | 64 |
| 5 | 37 | 35 | 48 | 39 | 76 | 62 | 65 | 76 | 58 | 51 | 42 | 64 |
| 6 | 38 | 37 | 51 | 38 | 69 | 57 | 60 | 75 | 60 | 47 | 44 | 69 |
| 7 | 40 | 44 | 53 | 43 | 66 | 62 | 55 | 165 | 55 | 46 | 50 | 63 |
| 8 | 40 | 37 | 48 | 35 | 131 | 59 | 57 | 156 | 55 | 47 | 52 | 60 |
| 9 | 41 | 39 | 47 | 38 | 582 | 61 | 67 | 149 | 56 | 48 | 53 | 66 |
| 10 | 44 | 66 | 47 | 40 | 332 | 59 | 64 | 119 | 54 | 49 | 57 | 57 |
| 11 | 47 | 61 | 49 | 40 | 305 | 67 | 63 | 89 | 57 | 50 | 53 | 63 |
| 12 | 48 | 46 | 52 | 38 | 220 | 75 | 66 | 90 | 57 | 48 | 55 | 67 |
| 13 | 46 | 43 | 234 | 37 | 157 | 60 | 271 | 142 | 55 | 48 | 51 | 61 |
| 14 | 43 | 42 | 146 | 37 | 131 | 61 | 898 | 126 | 56 | 48 | 55 | 57 |
| 15 | 46 | 43 | 75 | 38 | 117 | 66 | 361 | 347 | 57 | 47 | 55 | 57 |
| 16 | 59 | 42 | 55 | 38 | 111 | 56 | 186 | 1310 | 53 | 48 | 57 | 61 |
| 17 | 82 | 39 | 48 | 39 | 112 | 54 | 128 | 1200 | 50 | 48 | 54 | 61 |
| 18 | 66 | 40 | 42 | 40 | 110 | 61 | 93 | 335 | 54 | 45 | 56 | 57 |
| 19 | 57 | 41 | 43 | 43 | 98 | 53 | 87 | 213 | 88 | 43 | 57 | 48 |
| 20 | 55 | 42 | 42 | 48 | 93 | 55 | 75 | 168 | 143 | 43 | 59 | 51 |
| 21 | 53 | 49 | 42 | 188 | 93 | 60 | 68 | 154 | 407 | 43 | 55 | 43 |
| 22 | 62 | 55 | 66 | 977 | 81 | 55 | 65 | 127 | 149 | 43 | 66 | 43 |
| 23 | 92 | 52 | 210 | 1290 | 75 | 55 | 62 | 108 | 199 | 51 | 59 | 44 |
| 24 | 78 | 46 | 759 | 420 | 68 | 74 | 62 | 93 | 118 | 49 | 56 | 48 |
| 25 | 64 | 41 | 242 | 196 | 66 | 95 | 148 | 79 | 73 | 46 | 58 | 49 |
| 26 | 52 | 40 | 112 | 147 | 65 | 72 | 311 | 65 | 60 | 46 | 57 | 56 |
| 27 | 51 | 39 | 86 | 117 | 65 | 58 | 205 | 60 | 55 | 46 | 58 | 115 |
| 28 | 52 | 43 | 78 | 107 | 63 | 178 | 106 | 63 | 57 | 47 | 63 | 193 |
| 29 | 51 | 47 | 69 | 119 | 62 | 248 | 85 | 64 | 53 | 46 | 58 | 314 |
| 30 | 57 | 48 | 62 | 159 | --- | 145 | 82 | 60 | 50 | 53 | 61 | 742 |
| 31 | 263 | --- | 56 | 118 | --- | 98 | --- | 60 | --- | 40 | 61 | --- |
| TOTAL | 1806 | 1435 | 3043 | 4658 | 3691 | 2523 | 4082 | 6099 | 2453 | 1465 | 1675 | 2841 |
| MEAN | 58.3 | 47.8 | 98.2 | 150 | 127 | 81.4 | 136 | 197 | 81.8 | 47.3 | 54.0 | 94.7 |
| MAX | 263 | 140 | 759 | 1290 | 582 | 248 | 898 | 1310 | 407 | 53 | 66 | 742 |
| MIN | 34 | 35 | 42 | 35 | 62 | 53 | 55 | 60 | 50 | 40 | 39 | 43 |
| AC-FT | 3580 | 2850 | 6040 | 9240 | 7320 | 5000 | 8100 | 12100 | 4870 | 2910 | 3320 | 5640 |

CAL YR 1979 TOTAL 108798 MEAN 298 MAX 4430 MIN 12 AC-FT 215800
WTR YR 1980 TOTAL 35771 MEAN 97.7 MAX 1310 MIN 34 AC-FT 70950

## 08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year. Pesticide analyses: October 1976 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
pH: March to September 1977.
WATER TEMPERATURES: October 1967 to current year.
DISSOLVED OXYGEN: March to September 1977.

INSTRUMENTATION.--Water-quality monitor discontinued Nov. 22, 1977

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,010 micromhos Nov. 23, 1968; minimum, 200 micromhos Mar 27, Apr. 21, 1977.
WATER TEMPERATURES: Maximum, 34.0°C June 26, July 1, and Aug. 16, 17, 1980; minimum, 1.0°C Jan. 3, 1979.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 846 micromhos Dec. 11; minimum daily, 286 micromhos Jan. 22.
WATER TEMPERATURES: Maximum daily, 34.0°C June 26, July 1, and Aug. 16, 17; minimum daily, 3.0°C Feb. 10.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 18... | 1330 | 64 | 645 | 7.5 | 23.0 | 40 | 4.5 | .0 | 0 | 23 | 150 | 0 |
| NOV 15... | 1440 | 45 | 685 | 7.3 | 12.0 | 35 | .90 | .4 | 4 | 19 | 130 | 0 |
| DEC 10... | 1330 | 50 | 858 | 7.4 | 11.5 | 70 | 5.8 | .3 | 3 | 44 | 140 | 0 |
| JAN 10... | 1035 | 41 | 702 | 7.5 | 8.5 | 30 | 5.1 | 1.4 | 12 | 23 | 130 | 0 |
| FEB 21... | 1100 | 96 | 640 | 7.5 | 14.0 | 25 | -- | .2 | 2 | 17 | -- | -- |
| MAR 05... | 1235 | 60 | 650 | 7.4 | 12.0 | 25 | 6.5 | 2.2 | 20 | 17 | 150 | 0 |
| APR 16... | 1040 | 174 | 490 | 7.5 | 15.0 | 25 | 25 | -- | -- | -- | 150 | 7 |
| MAY 13... | 0945 | 228 | 610 | 7.6 | 24.5 | 40 | 7.0 | .2 | 2 | 19 | -- | -- |
| JUN 05... | 1505 | 58 | 655 | 8.2 | 29.0 | 60 | 11 | 10.6 | 138 | 39 | -- | -- |
| JUL 15... | 1050 | 44 | 740 | 7.4 | 30.0 | 100 | 14 | .1 | 1 | 22 | 140 | 0 |
| AUG 20... | 0945 | 58 | 600 | 7.4 | 28.5 | 40 | 85 | .0 | 0 | 16 | 120 | 0 |
| SEP 17... | 1600 | 59 | 560 | 8.2 | 28.0 | 45 | 4.7 | 11.7 | 150 | 18 | 110 | 0 |

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 18... | 54 | 3.3 | 57 | 2.0 | 11 | 220 | 0 | 46 | 56 | 1.8 | 8.1 | 346 |
| NOV 15... | 46 | 3.9 | 69 | 2.6 | 12 | 210 | 0 | 55 | 65 | 1.4 | 9.7 | 366 |
| DEC 10... | 49 | 4.4 | 90 | 3.3 | 13 | 280 | 0 | 54 | 78 | 3.4 | 23 | 453 |
| JAN 10... | 46 | 3.8 | 72 | 2.7 | 12 | 230 | 0 | 61 | 55 | 1.6 | 8.6 | 374 |
| FEB 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 05... | 54 | 4.7 | 62 | 2.2 | 9.0 | 210 | 0 | 69 | 49 | 1.2 | 6.5 | 359 |
| APR 16... | 53 | 3.3 | 35 | 1.3 | 5.8 | 170 | 0 | 54 | 23 | .8 | 7.0 | 266 |
| MAY 13... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 05... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL 15... | 48 | 4.3 | 77 | 2.9 | 12 | 240 | 0 | 42 | 71 | 2.2 | 9.1 | 384 |
| AUG 20... | 40 | 4.1 | 60 | 2.4 | 11 | 190 | 0 | 52 | 45 | 1.2 | 8.7 | 318 |
| SEP 17... | 36 | 3.7 | 60 | 2.5 | 11 | 180 | 0 | 55 | 48 | 1.6 | 8.3 | 314 |

## 08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) | SOLIDS, VOLA-TILE, SUS-PENDED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | PHENOLS (UG/L) | METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 18... | 6 | 6 | -- | -- | -- | -- | -- | 13 | -- | 27 | 52 | .10 |
| NOV 15... | 1 | 0 | .02 | .02 | .04 | 15 | 5.0 | 20 | -- | 23 | 13 | .10 |
| DEC 10... | 20 | 16 | .00 | .02 | .01 | 24 | 2.0 | 26 | 2.600 | 30 | 80 | .50 |
| JAN 10... | 14 | 14 | .08 | .04 | .12 | 14 | 4.0 | 18 | 5.600 | 23 | 6 | 1.1 |
| FEB 21... | -- | -- | .18 | .02 | .20 | 8.2 | 5.8 | 14 | 2.800 | 36 | 12 | .80 |
| MAR 05... | 8 | 8 | .10 | .04 | .14 | 10 | 7.0 | 17 | 4.200 | 23 | 5 | .40 |
| APR 16... | 52 | 17 | 1.3 | .27 | 1.6 | 3.7 | 1.0 | 4.7 | 1.200 | 21 | 4 | .30 |
| MAY 13... | 28 | 17 | .02 | .00 | .02 | 11 | 6.0 | 17 | 3.700 | 14 | 6 | .90 |
| JUN 05... | 11 | 5 | .03 | .11 | .14 | 12 | 7.0 | 19 | 3.900 | 46 | 12 | .20 |
| JUL 15... | 23 | 23 | 14 | .06 | 14 | 11 | 2.0 | 13 | 5.500 | 28 | 19 | .90 |
| AUG 20... | 10 | 14 | .00 | .01 | .00 | 11 | 4.0 | 15 | .590 | 28 | 10 | -- |
| SEP 17... | 16 | 8 | .01 | .14 | .15 | 1.4 | 14 | 15 | 3.400 | 18 | 5 | .10 |

| DATE | TIME | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| JAN 10... | 1035 | 2 | 20 | 3 | 0 | 0 | 80 |
| MAR 05... | 1235 | 2 | 30 | 2 | 0 | 6 | 30 |
| JUL 15... | 1050 | 3 | 20 | <1 | 0 | 2 | 80 |
| SEP 17... | 1600 | 3 | 20 | <1 | 40 | 1 | 40 |

| DATE | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY DIS-SOLVED (UG/L AS HG) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| JAN 10... | 2 | 100 | .1 | 0 | 1 | 30 |
| MAR 05... | 2 | 80 | .0 | 0 | 0 | 30 |
| JUL 15... | 0 | 70 | .2 | 0 | 0 | 10 |
| SEP 17... | 0 | 4 | .2 | 1 | C | 4 |

| DATE | TIME | PCB, TOTAL (UG/L) | PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | CHLOR-DANE, TOTAL (UG/L) | CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN 10... | 1035 | .0 | 0 | .00 | .00 | .0 | .1 | 0 | .00 | .0 |
| JUL 15... | 1050 | .0 | 13 | .00 | .01 | .0 | .1 | <24 | .00 | <.7 |

| DATE | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | DI-AZINON, TOTAL (UG/L) | DI-ELDRIN TOTAL (UG/L) | DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | ENDO-SULFAN, TOTAL (UG/L) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN 10... | .00 | .0 | .00 | .0 | .78 | .00 | 8.5 | .00 | .00 | .0 |
| JUL 15... | .00 | .0 | .00 | .0 | 1.0 | .00 | .7 | .00 | .00 | .0 |

## 08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | ETHION, TOTAL (UG/L) | HEPTA-CHLOR, TOTAL (UG/L) | HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | HEPTA-CHLOR EPOXIDE TOTAL (UG/L) | HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | MALA-THION, TOTAL (UG/L) | METH-OXY-CHLOR, TOTAL (UG/L) | METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN 10... | .00 | .00 | .0 | .00 | .7 | .02 | .0 | .04 | .00 | .0 |
| JUL 15... | .00 | .00 | .0 | .00 | .0 | .05 | .0 | .00 | .00 | .0 |

| DATE | METHYL PARA-THION, TOTAL (UG/L) | METHYL TRI-THION, TOTAL (UG/L) | MIREX, TOTAL (UG/L) | PARA-THION, TOTAL (UG/L) | TOX-APHENE, TOTAL (UG/L) | TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | TOTAL TRI-THION (UG/L) | 2,4-D, TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) | SILVEX, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN 10... | .00 | .00 | .00 | .00 | 0 | 0 | .00 | .09 | .00 | .00 |
| JUL 15... | .00 | .00 | .00 | .00 | 0 | <17 | .00 | .06 | .00 | .00 |

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 1806 | 617 | 329 | 1610 | 47 | 228 | 48 | 236 | 140 |
| NOV. | 1979 | 1435 | 595 | 319 | 1230 | 44 | 169 | 47 | 183 | 140 |
| DEC. | 1979 | 3043 | 495 | 268 | 2200 | 32 | 261 | 40 | 333 | 130 |
| JAN. | 1980 | 4658 | 422 | 231 | 2900 | 24 | 298 | 36 | 448 | 120 |
| FEB. | 1980 | 3691 | 537 | 290 | 2890 | 35 | 353 | 44 | 435 | 140 |
| MAR. | 1980 | 2523 | 636 | 338 | 2300 | 51 | 346 | 49 | 334 | 130 |
| APR. | 1980 | 4082 | 523 | 283 | 3120 | 35 | 381 | 43 | 469 | 130 |
| MAY | 1980 | 6099 | 452 | 247 | 4070 | 25 | 408 | 38 | 630 | 130 |
| JUNE | 1980 | 2453 | 553 | 298 | 1970 | 38 | 250 | 45 | 295 | 140 |
| JULY | 1980 | 1465 | 629 | 336 | 1330 | 48 | 189 | 49 | 195 | 140 |
| AUG. | 1980 | 1675 | 615 | 329 | 1490 | 46 | 206 | 48 | 219 | 140 |
| SEPT | 1980 | 2841 | 471 | 256 | 1970 | 28 | 217 | 39 | 300 | 130 |
| TOTAL | | 35771 | ** | ** | 27100 | ** | 3310 | ** | 4080 | ** |
| WTD. AVG. | | 98 | 519 | 280 | ** | 34 | ** | 42 | ** | 130 |

## 08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 668 | 358 | 686 | 640 | 513 | 761 | 547 | 652 | 655 | 614 | 622 | 556 |
| 2 | 704 | 468 | 704 | 620 | 554 | 550 | 574 | 681 | 648 | 581 | 619 | 587 |
| 3 | 666 | 534 | 684 | 618 | 566 | 537 | 663 | 600 | 677 | 560 | 639 | 543 |
| 4 | 570 | 668 | 768 | 650 | 606 | 615 | 752 | 469 | 604 | 634 | 635 | 561 |
| 5 | 666 | 634 | 744 | 658 | 609 | 628 | 748 | 626 | 606 | 584 | 612 | 539 |
| 6 | 648 | 674 | 804 | 736 | 589 | 656 | 754 | 664 | 614 | 675 | 528 | 618 |
| 7 | 674 | 610 | 656 | 745 | 639 | 734 | 785 | 520 | 694 | 655 | 512 | 622 |
| 8 | 692 | 558 | 808 | 752 | 600 | 736 | 711 | 500 | 654 | 560 | 633 | 712 |
| 9 | 692 | 574 | 802 | 728 | 405 | 771 | 616 | 474 | 700 | 533 | 608 | 560 |
| 10 | 628 | 576 | 828 | 672 | 432 | 766 | 704 | 605 | 747 | 635 | 604 | 505 |
| 11 | 594 | 574 | 846 | 682 | 431 | 768 | 750 | 540 | 601 | 628 | 597 | 548 |
| 12 | 672 | 532 | 632 | 808 | 444 | 594 | 767 | 561 | 559 | 633 | 600 | 577 |
| 13 | 694 | 612 | 500 | 812 | 503 | 555 | 612 | 452 | 653 | 635 | 588 | 585 |
| 14 | 678 | 626 | 408 | 784 | 538 | 745 | 362 | 575 | 699 | 639 | 564 | 561 |
| 15 | 682 | 598 | 450 | 796 | 592 | 788 | 428 | 445 | 671 | 638 | 568 | 580 |
| 16 | 718 | 628 | 584 | 798 | 595 | 695 | 487 | 317 | 692 | 553 | 587 | 577 |
| 17 | 570 | 696 | 602 | 748 | 586 | 790 | 522 | 381 | 748 | 655 | 566 | 560 |
| 18 | 514 | 670 | 626 | 740 | 593 | 839 | 587 | 404 | 595 | 651 | 614 | 530 |
| 19 | 608 | 744 | 644 | 760 | 555 | 768 | 654 | 460 | 575 | 647 | 613 | 557 |
| 20 | 696 | 710 | 654 | 782 | 587 | 703 | 728 | 464 | 500 | 665 | 560 | 705 |
| 21 | 688 | 680 | 660 | 600 | 621 | 685 | 724 | 478 | 400 | 666 | 549 | 661 |
| 22 | 680 | 638 | 644 | 286 | 632 | 750 | 711 | 537 | 464 | 622 | 657 | 630 |
| 23 | 548 | 676 | 376 | 292 | 757 | 772 | 671 | 531 | 493 | 624 | 707 | 581 |
| 24 | 552 | 654 | 306 | 366 | 762 | 817 | 651 | 563 | 370 | 650 | 634 | 553 |
| 25 | 534 | 592 | 452 | 420 | 785 | 733 | 500 | 566 | 475 | 707 | 717 | 525 |
| 26 | 580 | 590 | 496 | 434 | 744 | 650 | 416 | 644 | 569 | 680 | 685 | 611 |
| 27 | 672 | 622 | 492 | 474 | 644 | 595 | 407 | 694 | 582 | 681 | 635 | 720 |
| 28 | 754 | 708 | 448 | 476 | 731 | 550 | 520 | 579 | 625 | 653 | 617 | 373 |
| 29 | 728 | 620 | 498 | 498 | 725 | 412 | 586 | 593 | 657 | 685 | 638 | 350 |
| 30 | 738 | 614 | 542 | 518 | --- | 525 | 620 | 652 | 642 | 585 | 661 | 289 |
| 31 | 470 | --- | 546 | 492 | --- | 500 | --- | 692 | --- | 595 | 643 | --- |
| MEAN | 644 | 615 | 609 | 625 | 598 | 677 | 619 | 546 | 606 | 630 | 613 | 563 |

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25.0 | 16.0 | 10.0 | 10.0 | 4.0 | 10.0 | 18.0 | 22.0 | 22.0 | 34.0 | 31.0 | 30.0 |
| 2 | 24.0 | 15.0 | 8.0 | 9.0 | 4.0 | 7.0 | 19.0 | 24.0 | 28.0 | 32.0 | 31.0 | 30.0 |
| 3 | 22.0 | 15.0 | 9.0 | 10.0 | 6.0 | 7.0 | 20.0 | 23.0 | 29.0 | 32.0 | 31.0 | 31.0 |
| 4 | 21.0 | 16.0 | 10.0 | 10.0 | 8.0 | 10.0 | 19.0 | 23.0 | 30.0 | 30.0 | 29.0 | 30.0 |
| 5 | 23.0 | 15.0 | 14.0 | 9.0 | 9.0 | 10.0 | 19.0 | 24.0 | 30.0 | 32.0 | 30.0 | 30.0 |
| 6 | 21.0 | 15.0 | 13.0 | 11.0 | 10.0 | 14.0 | 18.0 | 25.0 | 29.0 | 32.0 | 31.0 | 30.0 |
| 7 | 21.0 | 14.0 | 7.0 | 10.0 | 8.0 | 15.0 | 22.0 | 24.0 | 29.0 | --- | 31.0 | 28.0 |
| 8 | 23.0 | 15.0 | 11.0 | 9.0 | 6.0 | 14.0 | 21.0 | 23.0 | 27.0 | --- | 33.0 | 28.0 |
| 9 | 22.0 | 16.0 | 12.0 | 10.0 | 6.0 | 14.0 | 21.0 | 22.0 | 27.0 | --- | 30.0 | 28.0 |
| 10 | 18.0 | 12.0 | 12.0 | 9.0 | 3.0 | 15.0 | 20.0 | 22.0 | 28.0 | --- | 33.0 | 29.0 |
| 11 | 19.0 | 14.0 | 14.0 | 10.0 | 4.0 | 14.0 | 20.0 | 25.0 | 29.0 | --- | 28.0 | 30.0 |
| 12 | 19.0 | 12.0 | 11.0 | 10.0 | 6.0 | 16.0 | 17.0 | 25.0 | 29.0 | --- | 30.0 | 29.0 |
| 13 | 20.0 | 13.0 | 10.0 | 11.0 | 7.0 | 15.0 | 11.0 | 24.0 | 29.0 | --- | 31.0 | 29.0 |
| 14 | 19.0 | 14.0 | 8.0 | 12.0 | 8.0 | 14.0 | 10.0 | 24.0 | 29.0 | --- | 31.0 | 29.0 |
| 15 | 17.0 | 15.0 | 9.0 | 12.0 | 11.0 | 13.0 | 14.0 | 21.0 | 30.0 | --- | 32.0 | 29.0 |
| 16 | 20.0 | 14.0 | 8.0 | 14.0 | --- | 16.0 | 18.0 | 20.0 | 30.0 | --- | 34.0 | 29.0 |
| 17 | 21.0 | 13.0 | 7.0 | 12.0 | 6.0 | 15.0 | 20.0 | 23.0 | 30.0 | --- | 34.0 | 30.0 |
| 18 | 22.0 | 11.0 | 9.0 | 14.0 | 7.0 | 14.0 | 21.0 | 25.0 | 31.0 | --- | 30.0 | 29.0 |
| 19 | 22.0 | 18.0 | 10.0 | 13.0 | 10.0 | 17.0 | 21.0 | 26.0 | 33.0 | --- | 30.0 | 29.0 |
| 20 | 23.0 | 19.0 | 11.0 | 14.0 | 15.0 | 17.0 | --- | 20.0 | 29.0 | --- | 31.0 | 29.0 |
| 21 | 23.0 | 16.0 | 13.0 | 12.0 | 14.0 | 18.0 | --- | 24.0 | 29.0 | --- | 31.0 | 29.0 |
| 22 | 23.0 | 13.0 | 15.0 | 9.0 | 15.0 | 17.0 | --- | 24.0 | 28.0 | 31.0 | 29.0 | 29.0 |
| 23 | 20.0 | 13.0 | 11.0 | 13.0 | 14.0 | 17.0 | 23.0 | 25.0 | 28.0 | 31.0 | 31.0 | 29.0 |
| 24 | 19.0 | 14.0 | 11.0 | 10.0 | 13.0 | 17.0 | 23.0 | 24.0 | 28.0 | 31.0 | 31.0 | 28.0 |
| 25 | 19.0 | 12.0 | 12.0 | 9.0 | 12.0 | 15.0 | 23.0 | 29.0 | 32.0 | 31.0 | 30.0 | 27.0 |
| 26 | 18.0 | 12.0 | 13.0 | 8.0 | 11.0 | 15.0 | 18.0 | 30.0 | 34.0 | 32.0 | 31.0 | 26.0 |
| 27 | 20.0 | 13.0 | 12.0 | 7.0 | 11.0 | 15.0 | 18.0 | 28.0 | 31.0 | 30.0 | 29.0 | 22.0 |
| 28 | 20.0 | 11.0 | 13.0 | 5.0 | 12.0 | 16.0 | 19.0 | 29.0 | 31.0 | 31.0 | 27.0 | 20.0 |
| 29 | 20.0 | 9.0 | 11.0 | 4.0 | 14.0 | 16.0 | 22.0 | 27.0 | 32.0 | 31.0 | 29.0 | 18.0 |
| 30 | 17.0 | 7.0 | 11.0 | 4.0 | --- | 16.0 | 21.0 | 27.0 | 32.0 | 31.0 | 29.0 | 18.0 |
| 31 | 16.0 | --- | 11.0 | 4.0 | --- | 17.0 | --- | 27.0 | --- | 32.0 | 29.0 | --- |
| MEAN | 20.5 | 13.5 | 11.0 | 10.0 | 9.0 | 14.5 | 19.0 | 24.5 | 29.5 | 31.5 | 30.5 | 27.5 |

## 08062500 TRINITY RIVER NEAR ROSSER, TX

LOCATION.--Lat 32°25'35", long 96°27'46", Ellis-Kaufman County line, Hydrologic Unit 12030105, on right bank at downstream side of right pier of bridge on State Highway 34, 2.5 mi (4.0 km) south of Rosser, 8.5 mi (13.7 km) downstream from East Fork Trinity River, and at mile 451.4 (726.3 km).

DRAINAGE AREA.--8,147 $mi^2$ (21,101 $km^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1924 to September 1925, October 1938 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1922: Drainage area. WDR TX-77-1: 1942(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 302.65 ft (92.248 m) National Geodetic Vertical Datum of 1929. July 25, 1924, to Sept. 30, 1925, nonrecording gage at abandoned lock and dam No. 7, 1.7 mi (2.7 km) upstream from present site at datum 6.94 ft (2.115 m) higher.

REMARKS.--Water-discharge records good. At times, flow is affected by storage in 15 upstream reservoirs having a combined capacity of 3,572,000 acre-ft (4.40 $km^3$), of which 1,138,000 acre-ft (1.40 $km^3$) is for flood control. A levee system constructed in 1916 extends several miles upstream and downstream from station. The cities of Fort Worth and Dallas and several small cities divert considerable water for municipal use, of which about 60 percent is returned as sewage effluents which sustain low flows at this site. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--43 years (water years 1925, 1939-80), 2,513 $ft^3/s$ (71.17 $m^3/s$), 1,821,000 acre-ft/yr (2.25 $km^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 150,000 $ft^3/s$ (4,250 $m^3/s$) Apr. 23, 1942, following numerous breaks in levee systems along both banks; maximum gage height, 41.55 ft (12.664 m) Apr. 22, 1942, just prior to levee breaks; minimum discharge, 32 $ft^3/s$ (0.91 $m^3/s$) for several days in 1924-25.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1908 reached a stage of about 33 ft (10.1 m), present site and datum, from information by Corps of Engineers (discharged believed to have been about the same as that of Apr. 22, 1942).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,500 $ft^3/s$ (354 $m^3/s$) May 16 at 1400 hours, gage height, 24.69 ft (7.526 m); minimum daily, 433 $ft^3/s$ (12.3 $m^3/s$) Oct. 12, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 479 | 2370 | 500 | 625 | 1070 | 708 | 863 | 832 | 806 | 530 | 570 | 471 |
| 2 | 496 | 1100 | 507 | 548 | 917 | 689 | 771 | 1100 | 767 | 532 | 564 | 474 |
| 3 | 498 | 720 | 516 | 538 | 929 | 685 | 730 | 2880 | 776 | 548 | 517 | 505 |
| 4 | 487 | 618 | 531 | 530 | 928 | 675 | 1400 | 2520 | 762 | 545 | 502 | 526 |
| 5 | 486 | 570 | 549 | 517 | 921 | 667 | 1110 | 957 | 749 | 514 | 548 | 520 |
| 6 | 484 | 570 | 566 | 491 | 894 | 668 | 851 | 843 | 737 | 495 | 539 | 517 |
| 7 | 477 | 558 | 560 | 469 | 873 | 666 | 821 | 2490 | 742 | 483 | 520 | 517 |
| 8 | 459 | 570 | 547 | 484 | 1010 | 689 | 817 | 1720 | 732 | 505 | 536 | 523 |
| 9 | 469 | 587 | 535 | 476 | 3330 | 645 | 823 | 2040 | 721 | 520 | 539 | 652 |
| 10 | 475 | 687 | 526 | 476 | 3120 | 637 | 810 | 1840 | 745 | 530 | 530 | 841 |
| 11 | 473 | 670 | 543 | 467 | 2170 | 651 | 798 | 1030 | 747 | 526 | 517 | 807 |
| 12 | 433 | 608 | 568 | 471 | 2450 | 677 | 792 | 1130 | 741 | 523 | 558 | 623 |
| 13 | 433 | 576 | 1620 | 457 | 1610 | 691 | 1260 | 1460 | 736 | 502 | 554 | 570 |
| 14 | 464 | 575 | 2140 | 461 | 1300 | 655 | 3980 | 1080 | 725 | 480 | 539 | 514 |
| 15 | 450 | 555 | 1010 | 469 | 1180 | 629 | 3510 | 2220 | 705 | 498 | 545 | 511 |
| 16 | 674 | 557 | 639 | 464 | 1130 | 615 | 1750 | 10500 | 697 | 502 | 551 | 545 |
| 17 | 2000 | 570 | 556 | 460 | 1160 | 650 | 1170 | 10500 | 699 | 511 | 545 | 539 |
| 18 | 1140 | 559 | 524 | 463 | 1120 | 766 | 1030 | 8100 | 622 | 511 | 542 | 536 |
| 19 | 639 | 526 | 504 | 475 | 1070 | 769 | 932 | 3740 | 581 | 511 | 548 | 558 |
| 20 | 548 | 559 | 495 | 616 | 946 | 755 | 880 | 1970 | 584 | 514 | 539 | 545 |
| 21 | 514 | 579 | 497 | 1140 | 871 | 760 | 836 | 1510 | 1820 | 486 | 542 | 536 |
| 22 | 532 | 705 | 635 | 5430 | 822 | 768 | 812 | 1320 | 1540 | 545 | 533 | 511 |
| 23 | 738 | 619 | 1150 | 9570 | 788 | 746 | 815 | 1180 | 1090 | 576 | 554 | 533 |
| 24 | 642 | 556 | 4510 | 7810 | 749 | 807 | 812 | 1230 | 896 | 545 | 536 | 530 |
| 25 | 560 | 523 | 4590 | 3620 | 781 | 793 | 1390 | 1120 | 693 | 526 | 523 | 530 |
| 26 | 521 | 514 | 1860 | 1570 | 844 | 704 | 2570 | 960 | 604 | 523 | 530 | 586 |
| 27 | 508 | 534 | 1010 | 1250 | 788 | 663 | 1700 | 896 | 576 | 523 | 530 | 733 |
| 28 | 484 | 534 | 817 | 1100 | 723 | 1100 | 1120 | 865 | 554 | 601 | 539 | 1590 |
| 29 | 468 | 531 | 717 | 1080 | 729 | 2150 | 958 | 880 | 536 | 598 | 561 | 2350 |
| 30 | 508 | 526 | 806 | 1200 | --- | 1620 | 884 | 866 | 523 | 595 | 539 | 6740 |
| 31 | 2060 | --- | 749 | 1540 | --- | 1210 | --- | 836 | --- | 623 | 511 | --- |
| TOTAL | 19599 | 19726 | 31277 | 45267 | 35223 | 24908 | 36995 | 70615 | 23206 | 16421 | 16701 | 25933 |
| MEAN | 632 | 658 | 1009 | 1460 | 1215 | 803 | 1233 | 2278 | 774 | 530 | 539 | 864 |
| MAX | 2060 | 2370 | 4590 | 9570 | 3330 | 2150 | 3980 | 10500 | 1820 | 623 | 570 | 6740 |
| MIN | 433 | 514 | 495 | 457 | 723 | 615 | 730 | 832 | 523 | 480 | 502 | 471 |
| AC-FT | 38870 | 39130 | 62040 | 89790 | 69860 | 49410 | 73380 | 140100 | 46030 | 32570 | 33130 | 51440 |

CAL YR 1979 TOTAL 802687 MEAN 2199 MAX 24700 MIN 433 AC-FT 1592000
WTR YR 1980 TOTAL 365871 MEAN 1000 MAX 10500 MIN 433 AC-FT 725700

## 08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1954 to current year. Chemical, biochemical, and pesticide analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1954 to current year.
pH: March 1977 to current year.
WATER TEMPERATURES: October 1954 to current year.
DISSOLVED OXYGEN: March 1977 to current year.

INSTRUMENTATION.--Water-quality monitor since Mar. 1, 1977.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,990 micromhos Oct. 13, 1956; minimum, 200 micromhos July 30, 1962.
pH: Maximum, 7.8 units Mar. 3, 5, 6, 1977, Jan. 23, 1979; minimum, 6.9 units Sept. 17, 18, 28, 29, 1980.
WATER TEMPERATURES: Maximum, 36.0°C July 1, 1955; minimum, 1.0°C on many days during winter months.
DISSOLVED OXYGEN: Maximum, 10.7 mg/L Nov. 9, 1977; minimum, 0.0 mg/L Apr. 19, 1979, and May 3, June 22, 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 994 micromhos Sept. 12; minimum, 214 micromhos Sept. 30.
pH: Maximum, 7.5 units on several days during year; minimum, 6.9 units Sept. 17, 18, 28, 19.
WATER TEMPERATURES: Maximum, 32.5°C on several days during July; minimum, 5.5°C Feb. 10.
DISSOLVED OXYGEN: Maximum, 9.7 mg/L Feb. 10; minimum, 0.0 mg/L May 3, June 22.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | | | |
| 22... | 1605 | 545 | 750 | 7.3 | 23.0 | 25 | 7.0 | 3.5 | 41 | 17 | 140 | 0 |
| NOV | | | | | | | | | | | | |
| 15... | 1330 | 570 | 745 | 7.4 | 14.0 | 15 | 3.2 | 5.3 | 50 | 13 | 140 | 0 |
| DEC | | | | | | | | | | | | |
| 10... | 1525 | 543 | 854 | 7.4 | 14.0 | 30 | 2.8 | 4.6 | 45 | 7.8 | 150 | 0 |
| JAN | | | | | | | | | | | | |
| 09... | 1520 | 502 | 824 | 7.4 | 11.0 | 20 | 1.4 | 6.2 | 56 | 20 | 160 | 0 |
| FEB | | | | | | | | | | | | |
| 21... | 1230 | 889 | 720 | 7.4 | 14.0 | 20 | 29 | 6.0 | 59 | 16 | 180 | 6 |
| MAR | | | | | | | | | | | | |
| 05... | 1510 | 611 | 850 | 7.5 | 13.0 | 15 | 9.8 | 5.6 | 53 | 18 | 180 | 0 |
| APR | | | | | | | | | | | | |
| 08... | 1045 | 824 | 770 | 7.4 | 20.0 | 20 | 28 | 3.0 | 33 | 23 | 170 | 0 |
| MAY | | | | | | | | | | | | |
| 13... | 1230 | 1420 | 515 | 7.4 | 24.5 | 45 | 180 | 4.0 | 48 | 18 | 130 | 9 |
| JUN | | | | | | | | | | | | |
| 03... | 1700 | 794 | 790 | 7.7 | 28.0 | 60 | 22 | 3.6 | 46 | 17 | 170 | 0 |
| JUL | | | | | | | | | | | | |
| 15... | 1340 | 539 | 902 | 7.6 | 32.0 | 35 | 15 | 5.8 | 78 | 17 | 120 | 0 |
| AUG | | | | | | | | | | | | |
| 27... | 0920 | 851 | 841 | 7.1 | 30.0 | 20 | 4.5 | 1.5 | 20 | 15 | 120 | 0 |
| SEP | | | | | | | | | | | | |
| 18... | 1130 | 511 | 800 | 7.3 | 29.0 | 23 | 6.4 | 1.6 | 21 | 17 | 120 | 0 |

| DATE | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | | | |
| 22... | 47 | 5.2 | 82 | 3.0 | 12 | 190 | 0 | 93 | 62 | 1.4 | 15 | 411 |
| NOV | | | | | | | | | | | | |
| 15... | 47 | 5.3 | 90 | 3.3 | 12 | 190 | 0 | 94 | 67 | 1.2 | 11 | 421 |
| DEC | | | | | | | | | | | | |
| 10... | 49 | 5.6 | 110 | 4.0 | 13 | 220 | 0 | 110 | 74 | 1.5 | 10 | 482 |
| JAN | | | | | | | | | | | | |
| 09... | 53 | 6.3 | 95 | 3.3 | 12 | 200 | 0 | 120 | 71 | 1.1 | 11 | 468 |
| FEB | | | | | | | | | | | | |
| 21... | 63 | 5.1 | 64 | 2.1 | 8.6 | 210 | 0 | 96 | 52 | .8 | 7.5 | 401 |
| MAR | | | | | | | | | | | | |
| 05... | 63 | 6.0 | 100 | 3.2 | 11 | 230 | 0 | 130 | 69 | 1.0 | 10 | 504 |
| APR | | | | | | | | | | | | |
| 08... | 58 | 5.7 | 81 | 2.7 | 10 | 210 | 0 | 100 | 67 | 1.0 | 9.6 | 436 |
| MAY | | | | | | | | | | | | |
| 13... | 46 | 4.1 | 46 | 1.7 | 6.7 | 150 | 0 | 67 | 34 | .7 | 10 | 288 |
| JUN | | | | | | | | | | | | |
| 03... | 58 | 5.5 | 83 | 2.8 | 9.5 | 220 | 0 | 95 | 66 | 1.0 | 9.5 | 436 |
| JUL | | | | | | | | | | | | |
| 15... | 41 | 5.2 | 120 | 4.7 | 13 | 210 | 0 | 110 | 86 | 1.6 | 15 | 495 |
| AUG | | | | | | | | | | | | |
| 27... | 39 | 5.9 | 110 | 4.3 | 13 | 170 | 0 | 110 | 93 | 1.6 | 12 | 468 |
| SEP | | | | | | | | | | | | |
| 18... | 40 | 5.3 | 110 | 4.3 | 12 | 150 | 0 | 110 | 81 | 1.3 | 11 | 445 |

## 08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) | SOLIDS, VOLA-TILE, SUS-PENDED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | PHENOLS (UG/L) | METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 22... | 24 | 13 | 1.5 | .720 | 2.2 | -- | -- | 6.3 | 4.000 | 13 | 4 | .20 |
| NOV 15... | 13 | 0 | 3.0 | .930 | 3.9 | 7.600 | 1.5 | 9.1 | 4.200 | 5.6 | 2 | .30 |
| DEC 10... | 14 | 3 | 1.7 | .870 | 2.6 | 6.600 | 2.2 | 8.8 | 1.900 | 16 | 6 | .10 |
| JAN 09... | 24 | 19 | 2.0 | 1.500 | 3.5 | 7.900 | 5.1 | 13 | .110 | 13 | 3 | .00 |
| FEB 21... | 53 | 13 | 1.6 | .420 | 2.0 | 5.800 | 2.0 | 7.8 | 2.300 | 17 | 2 | .10 |
| MAR 05... | 16 | 13 | 2.2 | .550 | 2.7 | 12.000 | 6.0 | 18 | 3.700 | 15 | 4 | .30 |
| APR 08... | 59 | 14 | 2.0 | .550 | 2.5 | 9.300 | 1.7 | 11 | 3.500 | 16 | 3 | .30 |
| MAY 13... | 154 | 6 | 1.9 | .390 | 2.3 | 2.500 | 1.5 | 4.0 | 1.700 | 14 | 1 | .10 |
| JUN 03... | 74 | 17 | .37 | .460 | .83 | 4.400 | .00 | 4.4 | 3.400 | 22 | 5 | .10 |
| JUL 15... | 33 | 11 | .00 | .000 | .00 | .080 | 1.0 | 1.1 | 4.900 | 22 | 2 | .20 |
| AUG 27... | 8 | 1 | 3.4 | .810 | 4.2 | 6.100 | 4.9 | 11 | 5.800 | 12 | 4 | .20 |
| SEP 18... | 7 | 0 | 4.9 | .990 | 5.9 | 3.800 | 2.7 | 6.5 | 4.700 | 14 | 5 | .20 |

| DATE | TIME | PCB, TOTAL (UG/L) | PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | CHLOR-DANE, TOTAL (UG/L) | CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| MAR 05... | 1510 | .0 | 110 | .00 | .00 | -- | .0 | 100 | .00 | .0 |
| JUL 15... | 1340 | .0 | 64 | .00 | .01 | .0 | .0 | <67 | .00 | <1.5 |

| DATE | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | DI-AZINON, TOTAL (UG/L) | DI-ELDRIN TOTAL (UG/L) | ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | ENDO-SULFAN, TOTAL (UG/L) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| MAR 05... | .00 | <10 | .00 | .0 | .41 | .00 | 1.1 | .00 | .00 | .0 |
| JUL 15... | .00 | .0 | .00 | .0 | .73 | .01 | 4.5 | .00 | .00 | .0 |

| DATE | ETHION, TOTAL (UG/L) | HEPTA-CHLOR, TOTAL (UG/L) | HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | HEPTA-CHLOR EPOXIDE TOTAL (UG/L) | HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | MALA-THION, TOTAL (UG/L) | METH-OXY-CHLOR, TOTAL (UG/L) | METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| MAR 05... | .00 | .00 | <.2 | .00 | .0 | .04 | .5 | .04 | .00 | .0 |
| JUL 15... | .00 | .00 | .0 | .00 | .0 | .07 | .0 | .02 | .00 | .0 |

| DATE | METHYL PARA-THION, TOTAL (UG/L) | METHYL TRI-THION, TOTAL (UG/L) | MIREX, TOTAL (UG/L) | PARA-THION, TOTAL (UG/L) | TOX-APHENE, TOTAL (UG/L) | TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | TOTAL TRI-THION (UG/L) | 2,4-D, TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) | SILVEX, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| MAR 05... | .00 | .00 | .00 | .00 | 0 | 0 | .00 | .07 | .00 | .00 |
| JUL 15... | .00 | .00 | .00 | .00 | 0 | <21 | .00 | 4.2 | .02 | .00 |

## 08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 19599 | 763 | 427 | 22600 | 60 | 3180 | 94 | 4960 | 160 |
| NOV. | 1979 | 19726 | 725 | 405 | 21600 | 56 | 2960 | 88 | 4710 | 160 |
| DEC. | 1979 | 31277 | 599 | 335 | 28300 | 42 | 3530 | 72 | 6050 | 150 |
| JAN. | 1980 | 45267 | 539 | 302 | 36900 | 36 | 4350 | 64 | 7810 | 150 |
| FEB. | 1980 | 35223 | 676 | 378 | 35900 | 49 | 4690 | 82 | 7760 | 160 |
| MAR. | 1980 | 24908 | 808 | 452 | 30400 | 66 | 4470 | 100 | 6730 | 160 |
| APR. | 1980 | 36995 | 605 | 339 | 33800 | 41 | 4110 | 72 | 7200 | 160 |
| MAY | 1980 | 70615 | 506 | 283 | 54000 | 31 | 5940 | 59 | 11300 | 150 |
| JUNE | 1980 | 23206 | 715 | 400 | 25100 | 54 | 3360 | 87 | 5440 | 160 |
| JULY | 1980 | 16421 | 848 | 474 | 21000 | 71 | 3160 | 110 | 4680 | 160 |
| AUG. | 1980 | 16701 | 847 | 473 | 21300 | 71 | 3200 | 110 | 4750 | 160 |
| SEPT | 1980 | 25933 | 674 | 377 | 26400 | 52 | 3670 | 82 | 5780 | 150 |
| TOTAL |  | 365871 | ** | ** | 357000 | ** | 46600 | ** | 77200 | ** |
| WTD. AVG. |  | 1000 | 647 | 362 | ** | 47 | ** | 78 | ** | 160 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | OCTOBER |  |  | NOVEMBER |  |  | DECEMBER |  |  | JANUARY |  |  |
| 1 | 820 | 782 | 804 | 566 | 394 | 498 | 834 | 798 | 823 | 722 | 668 | 693 |
| 2 | 828 | 812 | 818 | 530 | 476 | 493 | 854 | 818 | 838 | 718 | 616 | 658 |
| 3 | 814 | 794 | 804 | 564 | 494 | 518 | 832 | 818 | 824 | 688 | 610 | 650 |
| 4 | 818 | 788 | 802 | 620 | 568 | 600 | 846 | 804 | 827 | 722 | 688 | 705 |
| 5 | 844 | 818 | 831 | 720 | 626 | 677 | 822 | 806 | 812 | 770 | 712 | 741 |
| 6 | 866 | 846 | 858 | 752 | 708 | 726 | 834 | 800 | 819 | 798 | 752 | 775 |
| 7 | 854 | 838 | 847 | 772 | 734 | 751 | 854 | 830 | 843 | 824 | 788 | 804 |
| 8 | 868 | 842 | 855 | 832 | 776 | 796 | 870 | 800 | 839 | 824 | 810 | 816 |
| 9 | 876 | 858 | 867 | 846 | 814 | 829 | 836 | 808 | 825 | 832 | 816 | 824 |
| 10 | 858 | 812 | 844 | 832 | 804 | 821 | 846 | 830 | 839 | 854 | 812 | 835 |
| 11 | 818 | 800 | 810 | 804 | 788 | 797 | 876 | 846 | 860 | 874 | 844 | 858 |
| 12 | 836 | 814 | 825 | 796 | 758 | 778 | 850 | 810 | 834 | 886 | 864 | 876 |
| 13 | 872 | 836 | 854 | 790 | 774 | 778 | 854 | 620 | 795 | 892 | 858 | 876 |
| 14 | 862 | 828 | 847 | 778 | 752 | 764 | 640 | 482 | 575 | 900 | 868 | 887 |
| 15 | 858 | 830 | 844 | 768 | 732 | 749 | 618 | 516 | 556 | 916 | 886 | 898 |
| 16 | 876 | 848 | 861 | 806 | 770 | 784 | 600 | 538 | 557 | 894 | 856 | 872 |
| 17 | 876 | 504 | 764 | 816 | 792 | 804 | 644 | 604 | 628 | 896 | 856 | 875 |
| 18 | 530 | 456 | 496 | 820 | 790 | 805 | 696 | 646 | 681 | 918 | 884 | 900 |
| 19 | 550 | 532 | 537 | 846 | 824 | 836 | 740 | 696 | 722 | 932 | 884 | 904 |
| 20 | --- | --- | 650 | 848 | 822 | 836 | 778 | 722 | 740 | 892 | 754 | 814 |
| 21 | --- | --- | 700 | 834 | 794 | 816 | 818 | 780 | 795 | 862 | 650 | 766 |
| 22 | 774 | --- | 750 | 864 | 812 | 835 | 856 | 800 | 823 | 666 | 362 | 493 |
| 23 | 782 | 758 | 772 | 860 | 810 | 830 | 854 | 590 | 777 | 398 | 344 | 366 |
| 24 | 792 | 632 | 731 | 842 | 758 | 791 | 632 | 350 | 478 | 436 | 344 | 387 |
| 25 | 784 | 680 | 740 | 820 | 784 | 806 | 416 | 340 | 366 | 460 | 424 | 436 |
| 26 | 826 | 778 | 793 | 806 | 786 | 793 | 388 | 354 | 376 | 522 | 462 | 494 |
| 27 | 842 | 814 | 826 | 830 | 810 | 820 | 444 | 386 | 417 | 588 | 524 | 564 |
| 28 | 844 | 786 | 811 | 830 | 782 | 811 | 498 | 440 | 458 | 638 | 582 | 605 |
| 29 | 808 | 790 | 798 | 788 | 768 | 779 | 560 | 502 | 530 | 664 | 606 | 636 |
| 30 | 836 | 806 | 820 | 800 | 782 | 790 | 636 | 564 | 603 | 690 | 664 | 675 |
| 31 | 828 | 428 | 716 | --- | --- | --- | 682 | 638 | 653 | 732 | 662 | 701 |
| MONTH | 876 | 428 | 783 | 864 | 394 | 757 | 876 | 340 | 694 | 932 | 344 | 722 |

## 08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 738 | 556 | 624 | 806 | 784 | 796 | --- | --- | 650 | 776 | 698 | 716 |
| 2 | 730 | 614 | 680 | 850 | 806 | 833 | --- | --- | 700 | 744 | 672 | 721 |
| 3 | 788 | 732 | 760 | 882 | 824 | 854 | --- | --- | 750 | 748 | 470 | 611 |
| 4 | 828 | 792 | 812 | 876 | 850 | 864 | --- | --- | 550 | 496 | 418 | 454 |
| 5 | 832 | 772 | 810 | 886 | 858 | 872 | --- | --- | 500 | 598 | 498 | 537 |
| 6 | 774 | 734 | 758 | 874 | 810 | 842 | --- | --- | 550 | 650 | 564 | 590 |
| 7 | 788 | 752 | 771 | 910 | 836 | 875 | --- | --- | 600 | 796 | 346 | 419 |
| 8 | 790 | 682 | 752 | 900 | 860 | 879 | --- | --- | 650 | 644 | 478 | 518 |
| 9 | 674 | 476 | 586 | 926 | 866 | 895 | --- | --- | 700 | 742 | 512 | 661 |
| 10 | 522 | 456 | 488 | 928 | 906 | 917 | --- | --- | 750 | 752 | 526 | 587 |
| 11 | 524 | 502 | 513 | 918 | 870 | 890 | --- | --- | 770 | 742 | 556 | 579 |
| 12 | 594 | 520 | 560 | 922 | 878 | 894 | --- | --- | 790 | 772 | 446 | 540 |
| 13 | 588 | 524 | 549 | 922 | 884 | 903 | --- | --- | 550 | 602 | 462 | 530 |
| 14 | 670 | 590 | 644 | 922 | 880 | 903 | 486 | 426 | 467 | 830 | 612 | 635 |
| 15 | 728 | 654 | 688 | 914 | 862 | 877 | 460 | 422 | 444 | 746 | 496 | 595 |
| 16 | 746 | 708 | 726 | 890 | 850 | 867 | 504 | 446 | 473 | 582 | 302 | 360 |
| 17 | 754 | 726 | 739 | 930 | 892 | 904 | 622 | 512 | 581 | 420 | 340 | 377 |
| 18 | 744 | 730 | 737 | 932 | 884 | 902 | 702 | 618 | 658 | 460 | 428 | 448 |
| 19 | 748 | 724 | 735 | 932 | 876 | 905 | 748 | 648 | 708 | 502 | 450 | 477 |
| 20 | 764 | 722 | 739 | 946 | 872 | 919 | 784 | 726 | 753 | 562 | 502 | 532 |
| 21 | 762 | 722 | 741 | 894 | 838 | 869 | 788 | 746 | 766 | 608 | 564 | 580 |
| 22 | 774 | 754 | 760 | 862 | 826 | 849 | 782 | 756 | 768 | 630 | 602 | 618 |
| 23 | 802 | 774 | 787 | 840 | 818 | 834 | 798 | 760 | 775 | 702 | 624 | 666 |
| 24 | 820 | 804 | 813 | 844 | 818 | 831 | 796 | 762 | 779 | 726 | 690 | 709 |
| 25 | 842 | 810 | 833 | --- | --- | 820 | 778 | 628 | 734 | 742 | 696 | 717 |
| 26 | 880 | 836 | 854 | --- | --- | 830 | 716 | 516 | 611 | 722 | 678 | 709 |
| 27 | 892 | 846 | 870 | --- | --- | 850 | 604 | 526 | 567 | 684 | 660 | 670 |
| 28 | 848 | 772 | 812 | --- | --- | 700 | 600 | 526 | 548 | 694 | 660 | 678 |
| 29 | 810 | 772 | 793 | --- | --- | 650 | 660 | 570 | 610 | 722 | 688 | 704 |
| 30 | --- | --- | --- | --- | --- | 580 | 714 | 658 | 680 | 748 | 728 | 735 |
| 31 | --- | --- | --- | --- | --- | 550 | --- | --- | --- | 756 | 740 | 748 |
| MONTH | 892 | 456 | 722 | 946 | 784 | 837 | 798 | 422 | 648 | 830 | 302 | 594 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 760 | 746 | 752 | --- | --- | 820 | 854 | 796 | 834 | 858 | 832 | 850 |
| 2 | 772 | 738 | 754 | 854 | --- | 830 | 890 | 838 | 864 | 886 | 854 | 875 |
| 3 | 778 | 738 | 767 | 840 | 808 | 826 | 892 | 858 | 877 | 858 | 798 | 843 |
| 4 | 746 | 720 | 738 | 868 | 840 | 851 | 912 | 866 | 886 | 796 | 768 | 786 |
| 5 | 766 | 720 | 749 | 890 | 864 | 876 | 892 | 862 | 877 | 790 | 768 | 780 |
| 6 | 768 | 746 | 759 | 888 | 870 | 880 | 876 | 830 | 854 | 852 | 788 | 821 |
| 7 | 778 | 758 | 771 | 892 | 868 | 882 | 850 | 818 | 837 | 866 | 846 | 857 |
| 8 | 772 | 758 | 765 | 868 | 824 | 851 | 852 | 784 | 812 | 912 | 870 | 888 |
| 9 | 776 | 754 | 766 | 832 | 792 | 817 | 862 | 812 | 847 | 888 | 860 | 872 |
| 10 | 778 | 746 | 766 | 846 | 802 | 820 | 874 | 860 | 866 | 898 | 856 | 875 |
| 11 | 746 | 708 | 728 | 858 | 822 | 842 | 886 | 868 | 877 | 920 | 746 | 811 |
| 12 | 758 | --- | 745 | 858 | 826 | 842 | 872 | 840 | 862 | 994 | 942 | 973 |
| 13 | 750 | 732 | 744 | 842 | 822 | 833 | 864 | 828 | 844 | 942 | 860 | 888 |
| 14 | 768 | 740 | 755 | 852 | 834 | 841 | 846 | 824 | 836 | 852 | 772 | 792 |
| 15 | 770 | 750 | 761 | 874 | 856 | 864 | 856 | 842 | 849 | 852 | 804 | 827 |
| 16 | 790 | 756 | 770 | 872 | 846 | 854 | 860 | 834 | 850 | 880 | 856 | 868 |
| 17 | 796 | 776 | 783 | 856 | 816 | 840 | 840 | 826 | 834 | 876 | 830 | 856 |
| 18 | 780 | 738 | 752 | 858 | 844 | 850 | 840 | 826 | 832 | 860 | 832 | 848 |
| 19 | 764 | 752 | 758 | 868 | 840 | 854 | 860 | 838 | 849 | 880 | 856 | 867 |
| 20 | 764 | 744 | 753 | 880 | 854 | 869 | 838 | 816 | 829 | 900 | 872 | 886 |
| 21 | 790 | 476 | 690 | 870 | 840 | 859 | 826 | 792 | 812 | 894 | 872 | 886 |
| 22 | 650 | 478 | 526 | 898 | 858 | 878 | 824 | 804 | 814 | 896 | 874 | 886 |
| 23 | 612 | 490 | 562 | 896 | 824 | 859 | 820 | 810 | 816 | 912 | 848 | 881 |
| 24 | 612 | 542 | 585 | 856 | 834 | 844 | 840 | 822 | 830 | 850 | 784 | 830 |
| 25 | 648 | 562 | 611 | 864 | 836 | 851 | 850 | 840 | 846 | 802 | 772 | 788 |
| 26 | 708 | 650 | 680 | 882 | 854 | 867 | 892 | 850 | 870 | 848 | 792 | 817 |
| 27 | --- | --- | 730 | 882 | 856 | 872 | 870 | 826 | 857 | 872 | 838 | 852 |
| 28 | --- | --- | 760 | 872 | 862 | 868 | 828 | 802 | 817 | 850 | 614 | 761 |
| 29 | --- | --- | 790 | 874 | 762 | 823 | 872 | 828 | 853 | 738 | 482 | 564 |
| 30 | --- | --- | 800 | 872 | 834 | 846 | 886 | 870 | 878 | 446 | 214 | 287 |
| 31 | --- | --- | --- | 866 | 758 | 790 | 884 | 818 | 852 | --- | --- | --- |
| MONTH | 796 | 476 | 729 | 898 | 758 | 848 | 912 | 784 | 847 | 994 | 214 | 821 |

## 08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

### PH (STANDARD UNITS), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 7.2 | 7.1 | 7.2 | 7.2 | 7.1 | 7.2 | 7.1 | 7.0 | 7.1 | 7.2 | 7.2 | 7.2 |
| 2 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 |
| 3 | 7.2 | 7.1 | 7.2 | 7.2 | 7.1 | 7.1 | 7.2 | 7.1 | 7.1 | 7.2 | 7.1 | 7.2 |
| 4 | 7.2 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.2 | 7.1 | 7.2 | 7.2 | 7.2 | 7.2 |
| 5 | 7.2 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.2 | 7.1 | 7.1 | 7.2 | 7.1 | 7.1 |
| 6 | 7.2 | 7.1 | 7.2 | 7.2 | 7.1 | 7.1 | 7.2 | 7.1 | 7.1 | 7.2 | 7.1 | 7.2 |
| 7 | 7.2 | 7.1 | 7.2 | 7.2 | 7.1 | 7.2 | 7.2 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 |
| 8 | 7.2 | 7.1 | 7.2 | 7.2 | 7.1 | 7.2 | 7.1 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 |
| 9 | 7.2 | 7.1 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 |
| 10 | 7.1 | 7.0 | 7.1 | 7.2 | 7.1 | 7.2 | 7.2 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 |
| 11 | 7.1 | 7.1 | 7.1 | 7.2 | 7.1 | 7.2 | 7.2 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 |
| 12 | 7.1 | 7.1 | 7.1 | 7.2 | 7.1 | 7.1 | 7.2 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 |
| 13 | 7.1 | 7.1 | 7.1 | 7.2 | 7.1 | 7.1 | 7.1 | 7.0 | 7.1 | 7.2 | 7.2 | 7.2 |
| 14 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.0 | 7.0 | 7.2 | 7.2 | 7.2 |
| 15 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.0 | 7.0 | 7.0 | 7.3 | 7.2 | 7.3 |
| 16 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.0 | 7.1 | 7.3 | 7.2 | 7.3 |
| 17 | 7.1 | 7.0 | 7.0 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.3 | 7.2 | 7.3 |
| 18 | 7.0 | 7.0 | 7.0 | 7.1 | 7.1 | 7.1 | 7.2 | 7.1 | 7.1 | 7.3 | 7.3 | 7.3 |
| 19 | 7.1 | 7.0 | 7.1 | 7.1 | 7.1 | 7.1 | 7.2 | 7.1 | 7.2 | 7.3 | 7.3 | 7.3 |
| 20 | --- | --- | --- | 7.2 | 7.1 | 7.1 | 7.2 | 7.1 | 7.1 | 7.3 | 7.3 | 7.3 |
| 21 | --- | --- | --- | 7.1 | 7.1 | 7.1 | 7.2 | 7.1 | 7.1 | 7.3 | 7.2 | 7.3 |
| 22 | 7.3 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 | 7.3 | 7.2 | 7.3 |
| 23 | 7.3 | 7.2 | 7.2 | 7.1 | 7.1 | 7.1 | 7.3 | 7.2 | 7.2 | 7.3 | 7.2 | 7.3 |
| 24 | 7.2 | 7.1 | 7.2 | 7.1 | 7.1 | 7.1 | 7.2 | 7.1 | 7.2 | 7.4 | 7.3 | 7.3 |
| 25 | 7.2 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.2 | 7.1 | 7.2 | 7.4 | 7.3 | 7.3 |
| 26 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 | 7.3 | 7.3 | 7.3 |
| 27 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 | 7.3 | 7.2 | 7.2 |
| 28 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 | 7.3 | 7.2 | 7.3 |
| 29 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 | 7.3 | 7.2 | 7.3 |
| 30 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 | 7.3 | 7.2 | 7.2 |
| 31 | 7.2 | 7.1 | 7.1 | --- | --- | --- | 7.2 | 7.2 | 7.2 | 7.3 | 7.2 | 7.2 |
| MONTH | 7.3 | 7.0 | 7.2 | 7.2 | 7.1 | 7.1 | 7.3 | 7.0 | 7.1 | 7.4 | 7.1 | 7.2 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 7.4 | 7.2 | 7.3 | 7.4 | 7.3 | 7.3 | --- | --- | --- | 7.2 | 7.1 | 7.1 |
| 2 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 | --- | --- | --- | 7.2 | 7.1 | 7.2 |
| 3 | 7.3 | 7.3 | 7.3 | 7.3 | 7.2 | 7.3 | --- | --- | --- | 7.1 | 7.0 | 7.1 |
| 4 | 7.3 | 7.2 | 7.3 | 7.3 | 7.2 | 7.3 | --- | --- | --- | 7.1 | 7.0 | 7.0 |
| 5 | 7.3 | 7.2 | 7.3 | 7.2 | 7.2 | 7.2 | --- | --- | --- | 7.1 | 7.0 | 7.1 |
| 6 | 7.3 | 7.2 | 7.3 | 7.2 | 7.2 | 7.2 | --- | --- | --- | 7.2 | 7.1 | 7.1 |
| 7 | 7.3 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | --- | --- | --- | 7.3 | 7.1 | 7.2 |
| 8 | 7.3 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | --- | --- | --- | 7.5 | 7.1 | 7.1 |
| 9 | 7.3 | 7.2 | 7.2 | 7.2 | 7.1 | 7.2 | --- | --- | --- | 7.2 | 7.1 | 7.1 |
| 10 | 7.3 | 7.2 | 7.3 | 7.3 | 7.2 | 7.3 | --- | --- | --- | 7.2 | 7.1 | 7.1 |
| 11 | 7.2 | 7.2 | 7.2 | 7.3 | 7.3 | 7.3 | --- | --- | --- | 7.1 | 7.0 | 7.1 |
| 12 | 7.2 | 7.1 | 7.2 | 7.3 | 7.3 | 7.3 | --- | --- | --- | 7.4 | 7.1 | 7.1 |
| 13 | 7.5 | 7.2 | 7.4 | 7.4 | 7.3 | 7.3 | --- | --- | --- | 7.5 | 7.2 | 7.2 |
| 14 | 7.4 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 | 7.1 | 7.0 | 7.1 | 7.3 | 7.1 | 7.2 |
| 15 | 7.4 | 7.3 | 7.4 | 7.3 | 7.3 | 7.3 | 7.1 | 7.0 | 7.1 | 7.3 | 7.1 | 7.2 |
| 16 | 7.4 | 7.3 | 7.3 | 7.3 | 7.2 | 7.2 | 7.1 | 7.1 | 7.1 | 7.3 | 7.1 | 7.1 |
| 17 | 7.3 | 7.3 | 7.3 | 7.3 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 |
| 18 | 7.4 | 7.3 | 7.3 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.1 | 7.2 | 7.1 | 7.2 |
| 19 | 7.4 | 7.3 | 7.3 | 7.2 | 7.2 | 7.2 | 7.2 | 7.1 | 7.2 | 7.2 | 7.1 | 7.1 |
| 20 | 7.4 | 7.3 | 7.3 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 |
| 21 | 7.4 | 7.3 | 7.3 | 7.2 | 7.1 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.1 | 7.2 |
| 22 | 7.4 | 7.3 | 7.3 | 7.2 | 7.1 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 |
| 23 | 7.3 | 7.3 | 7.3 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 |
| 24 | 7.3 | 7.3 | 7.3 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 |
| 25 | 7.3 | 7.3 | 7.3 | --- | --- | --- | 7.2 | 7.1 | 7.2 | 7.3 | 7.2 | 7.2 |
| 26 | 7.3 | 7.2 | 7.3 | --- | --- | --- | 7.1 | 7.0 | 7.0 | 7.2 | 7.2 | 7.2 |
| 27 | 7.3 | 7.3 | 7.3 | --- | --- | --- | 7.0 | 7.0 | 7.0 | 7.2 | 7.2 | 7.2 |
| 28 | 7.3 | 7.3 | 7.3 | --- | --- | --- | 7.1 | 7.0 | 7.1 | 7.2 | 7.1 | 7.2 |
| 29 | 7.4 | 7.3 | 7.3 | --- | --- | --- | 7.1 | 7.1 | 7.1 | 7.2 | 7.1 | 7.1 |
| 30 | --- | --- | --- | --- | --- | --- | 7.2 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 |
| 31 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 7.1 | 7.1 | 7.1 |
| MONTH | 7.5 | 7.1 | 7.3 | 7.4 | 7.1 | 7.2 | 7.2 | 7.0 | 7.1 | 7.5 | 7.0 | 7.1 |

## 08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

### PH (STANDARD UNITS), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 7.2 | 7.1 | 7.1 | --- | --- | --- | 7.2 | 7.2 | 7.2 | 7.0 | 7.0 | 7.0 |
| 2 | 7.2 | 7.1 | 7.1 | 7.5 | --- | --- | 7.2 | 7.1 | 7.1 | 7.1 | 7.0 | 7.0 |
| 3 | 7.2 | 7.1 | 7.2 | 7.4 | 7.3 | 7.3 | 7.1 | 7.0 | 7.1 | 7.1 | 7.0 | 7.1 |
| 4 | 7.2 | 7.2 | 7.2 | 7.4 | 7.3 | 7.3 | 7.1 | 7.0 | 7.1 | 7.0 | 7.0 | 7.0 |
| 5 | 7.3 | 7.1 | 7.2 | 7.5 | 7.3 | 7.3 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| 6 | 7.4 | 7.2 | 7.2 | 7.5 | 7.3 | 7.3 | 7.1 | 7.0 | 7.1 | 7.1 | 7.0 | 7.1 |
| 7 | 7.3 | 7.2 | 7.2 | 7.5 | 7.2 | 7.3 | 7.1 | 7.0 | 7.1 | 7.1 | 7.1 | 7.1 |
| 8 | 7.2 | 7.2 | 7.2 | 7.4 | 7.2 | 7.3 | 7.1 | 7.1 | 7.1 | 7.1 | 7.0 | 7.1 |
| 9 | 7.2 | 7.1 | 7.2 | 7.3 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 |
| 10 | 7.2 | 7.1 | 7.2 | 7.2 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.1 |
| 11 | 7.2 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.3 | 7.1 | 7.3 | 7.1 | 7.0 | 7.1 |
| 12 | 7.2 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.3 | 7.2 | 7.3 | 7.2 | 7.2 | 7.2 |
| 13 | 7.1 | 7.1 | 7.1 | 7.2 | 7.1 | 7.2 | 7.3 | 7.2 | 7.3 | 7.2 | 7.0 | 7.1 |
| 14 | 7.1 | 7.0 | 7.0 | 7.3 | 7.1 | 7.2 | 7.3 | 7.2 | 7.2 | 7.0 | 7.0 | 7.0 |
| 15 | 7.1 | 7.0 | 7.0 | 7.3 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.0 | 7.0 | 7.0 |
| 16 | 7.1 | 7.1 | 7.1 | 7.4 | 7.1 | 7.2 | 7.2 | 7.2 | 7.2 | 7.0 | 7.0 | 7.0 |
| 17 | 7.2 | 7.1 | 7.2 | 7.3 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.0 | 6.9 | 7.0 |
| 18 | 7.2 | 7.1 | 7.2 | 7.3 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.0 | 6.9 | 6.9 |
| 19 | 7.2 | 7.1 | 7.2 | 7.2 | 7.1 | 7.2 | 7.2 | 7.2 | 7.2 | 7.0 | 7.0 | 7.0 |
| 20 | 7.2 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.2 | 7.2 | 7.2 | 7.0 | 7.0 | 7.0 |
| 21 | 7.1 | 7.0 | 7.0 | 7.1 | 7.0 | 7.1 | 7.2 | 7.2 | 7.2 | 7.0 | 7.0 | 7.0 |
| 22 | 7.1 | 7.0 | 7.0 | 7.1 | 7.0 | 7.0 | 7.2 | 7.2 | 7.2 | 7.0 | 7.0 | 7.0 |
| 23 | 7.1 | 7.1 | 7.1 | 7.1 | 7.0 | 7.0 | 7.2 | 7.2 | 7.2 | 7.1 | 7.0 | 7.0 |
| 24 | 7.1 | 7.0 | 7.0 | 7.1 | 7.0 | 7.0 | 7.2 | 7.2 | 7.2 | 7.1 | 7.0 | 7.1 |
| 25 | 7.1 | 7.0 | 7.0 | 7.1 | 7.0 | 7.1 | 7.2 | 7.2 | 7.2 | 7.0 | 7.0 | 7.0 |
| 26 | 7.1 | --- | --- | 7.1 | 7.1 | 7.1 | 7.2 | 7.1 | 7.2 | 7.1 | 7.0 | 7.0 |
| 27 | --- | --- | --- | 7.1 | 7.0 | 7.0 | 7.2 | 7.1 | 7.1 | 7.0 | 7.0 | 7.0 |
| 28 | --- | --- | --- | 7.2 | 7.1 | 7.2 | 7.1 | 7.1 | 7.1 | 7.0 | 6.9 | 7.0 |
| 29 | --- | --- | --- | 7.3 | 7.2 | 7.2 | 7.1 | 7.1 | 7.1 | 7.0 | 6.9 | 6.9 |
| 30 | --- | --- | --- | 7.3 | 7.2 | 7.2 | 7.1 | 7.1 | 7.1 | 7.1 | 7.0 | 7.0 |
| 31 | --- | --- | --- | 7.2 | 7.2 | 7.2 | 7.1 | 7.0 | 7.1 | --- | --- | --- |
| MONTH | 7.4 | 7.0 | 7.1 | 7.5 | 7.0 | 7.2 | 7.3 | 7.0 | 7.2 | 7.2 | 6.9 | 7.0 |

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 27.5 | 26.5 | 27.0 | 19.0 | 17.0 | 18.0 | 11.5 | 11.0 | 11.5 | 12.5 | 11.5 | 12.0 |
| 2 | 26.5 | 25.5 | 26.5 | 18.0 | 16.5 | 17.0 | 11.5 | 10.5 | 11.0 | 12.0 | 11.5 | 11.5 |
| 3 | 26.0 | 25.0 | 25.5 | 17.0 | 16.5 | 17.0 | 11.0 | 10.5 | 11.0 | 12.0 | 11.0 | 11.5 |
| 4 | 25.0 | 23.5 | 24.5 | 17.0 | 16.5 | 17.0 | 12.0 | 11.0 | 11.5 | 11.0 | 10.5 | 11.0 |
| 5 | 23.5 | 23.0 | 23.5 | 17.0 | 16.5 | 16.5 | 13.0 | 11.5 | 12.5 | 11.0 | 10.5 | 10.5 |
| 6 | 23.5 | 23.0 | 23.0 | 17.0 | 16.0 | 16.5 | 13.5 | 12.5 | 13.0 | 11.5 | 10.5 | 11.0 |
| 7 | 24.0 | 23.0 | 23.5 | 16.5 | 15.5 | 16.0 | 13.0 | 12.5 | 13.0 | 11.5 | 11.0 | 11.5 |
| 8 | 24.5 | 23.5 | 24.0 | 16.5 | 16.0 | 16.0 | 13.5 | 12.5 | 13.0 | 11.0 | 10.0 | 10.5 |
| 9 | 24.5 | 23.0 | 24.0 | 18.0 | 17.0 | 17.5 | 13.0 | 12.5 | 13.0 | 11.0 | 10.0 | 10.5 |
| 10 | 22.5 | 21.0 | 21.5 | 17.5 | 16.0 | 16.5 | 14.0 | 13.0 | 13.5 | 12.0 | 11.0 | 11.5 |
| 11 | 22.0 | 21.0 | 21.5 | 16.0 | 15.5 | 15.5 | 15.5 | 14.0 | 15.0 | 12.0 | 11.5 | 12.0 |
| 12 | 23.0 | 21.5 | 22.5 | 15.5 | 14.0 | 15.0 | 15.0 | 12.5 | 14.0 | 12.0 | 11.5 | 11.5 |
| 13 | 23.0 | 22.0 | 22.5 | 14.5 | 13.5 | 14.0 | 14.0 | 11.5 | 13.0 | 12.0 | 11.5 | 12.0 |
| 14 | 22.5 | 22.0 | 22.0 | 14.5 | 13.5 | 14.0 | 11.0 | 9.5 | 10.0 | 13.0 | 12.0 | 12.5 |
| 15 | 22.0 | 21.5 | 21.5 | 14.5 | 13.5 | 14.0 | 10.0 | 9.5 | 9.5 | 14.5 | 13.0 | 14.0 |
| 16 | 22.5 | 21.5 | 22.0 | 15.0 | 13.5 | 14.5 | 9.5 | 8.5 | 9.5 | 15.0 | 14.5 | 15.0 |
| 17 | 23.0 | 22.0 | 22.5 | 15.5 | 14.5 | 15.0 | 9.5 | 8.0 | 8.5 | 15.0 | 14.5 | 15.0 |
| 18 | 22.5 | 21.5 | 22.0 | 17.0 | 16.0 | 16.5 | 9.0 | 8.0 | 8.5 | 15.0 | 14.5 | 15.0 |
| 19 | --- | 22.5 | 23.5 | 18.0 | 17.0 | 17.5 | 10.0 | 8.5 | 9.5 | 15.5 | 15.0 | 15.0 |
| 20 | --- | --- | --- | 19.5 | 18.0 | 18.5 | 12.0 | 10.0 | 10.5 | 15.5 | 14.5 | 15.0 |
| 21 | --- | --- | --- | 19.5 | 19.0 | 19.5 | 14.0 | 12.0 | 13.0 | 14.5 | 13.0 | 14.0 |
| 22 | --- | 17.0 | 22.5 | 18.5 | 16.0 | 17.0 | 16.0 | 14.0 | 15.0 | 13.0 | 10.5 | 11.5 |
| 23 | 22.5 | 21.5 | 22.0 | 16.0 | 15.0 | 15.5 | 16.5 | 14.0 | 15.5 | 10.0 | 9.0 | 9.5 |
| 24 | 21.5 | 20.5 | 21.0 | 15.0 | 14.5 | 14.5 | 15.0 | 12.5 | 13.5 | 10.0 | 9.0 | 9.5 |
| 25 | 20.5 | 20.0 | 20.0 | 14.5 | 14.0 | 14.0 | 12.0 | 11.5 | 12.0 | 10.5 | 9.5 | 10.0 |
| 26 | 20.5 | 19.5 | 20.0 | 14.5 | 14.0 | 14.0 | 12.0 | 11.5 | 11.5 | 10.5 | 10.5 | 10.5 |
| 27 | 21.0 | 20.0 | 20.5 | 15.5 | 14.0 | 15.0 | 13.0 | 12.0 | 12.5 | 10.5 | 9.5 | 10.0 |
| 28 | 22.0 | 20.5 | 21.5 | 15.0 | 13.5 | 14.5 | 13.5 | 13.0 | 13.0 | 9.5 | 9.0 | 9.0 |
| 29 | 22.0 | 21.0 | 21.5 | 13.5 | 12.0 | 13.0 | 13.5 | 13.0 | 13.5 | 8.5 | 8.0 | 8.0 |
| 30 | 21.5 | 20.5 | 21.5 | 12.0 | 11.5 | 11.5 | 13.0 | 13.0 | 13.0 | 8.5 | 8.0 | 8.5 |
| 31 | 21.0 | 19.0 | 20.0 | --- | --- | --- | 13.0 | 12.5 | 12.5 | 8.5 | 7.5 | 8.0 |
| MONTH | 27.5 | 17.0 | 22.5 | 19.5 | 11.5 | 15.5 | 16.5 | 8.0 | 12.0 | 15.5 | 7.5 | 11.5 |

## 08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 8.0 | 6.0 | 7.0 | 16.0 | 12.5 | 14.5 | --- | --- | --- | 22.0 | 21.0 | 21.5 |
| 2 | 8.0 | 7.0 | 7.5 | 12.5 | 11.5 | 12.0 | --- | --- | --- | 22.5 | 22.0 | 22.0 |
| 3 | 9.5 | 8.0 | 8.5 | 12.0 | 11.5 | 11.5 | --- | --- | --- | 23.0 | 20.5 | 22.0 |
| 4 | 11.0 | 9.5 | 10.0 | 13.5 | 11.5 | 12.5 | --- | --- | --- | 22.0 | 20.0 | 21.0 |
| 5 | 12.0 | 11.0 | 11.5 | 13.5 | 13.0 | 13.0 | --- | --- | --- | 23.5 | 22.0 | 22.5 |
| 6 | 12.0 | 11.5 | 12.0 | 14.5 | 12.5 | 13.5 | --- | --- | --- | 24.0 | 23.0 | 23.5 |
| 7 | 12.5 | 11.5 | 12.0 | 17.0 | 14.5 | 16.0 | --- | --- | --- | 24.0 | 20.5 | 21.5 |
| 8 | 11.5 | 9.5 | 10.5 | 17.0 | 16.0 | 16.5 | --- | --- | --- | 24.0 | 22.0 | 23.0 |
| 9 | 9.0 | 6.0 | 8.0 | 16.5 | 15.5 | 16.0 | --- | --- | --- | 23.0 | 21.5 | 22.5 |
| 10 | 7.0 | 5.5 | 6.0 | 17.5 | 16.5 | 17.0 | --- | --- | --- | 22.5 | 21.5 | 22.0 |
| 11 | 7.0 | 6.0 | 6.5 | 17.5 | 16.5 | 17.0 | --- | --- | --- | 23.5 | 22.0 | 22.5 |
| 12 | 9.0 | 7.0 | 8.0 | 18.0 | 16.0 | 17.0 | --- | --- | --- | 24.0 | 23.5 | 23.5 |
| 13 | 9.0 | 7.0 | 7.5 | 18.0 | 17.0 | 17.5 | --- | --- | --- | 24.5 | 24.0 | 24.5 |
| 14 | 11.5 | 9.0 | 10.0 | 17.0 | 16.5 | 17.0 | 13.5 | 12.0 | 12.5 | 24.5 | 23.5 | 24.0 |
| 15 | 13.5 | 11.5 | 12.5 | 17.5 | 16.5 | 17.0 | 15.0 | 12.5 | 13.5 | 24.0 | 21.5 | 22.5 |
| 16 | 13.5 | 10.5 | 11.5 | 18.0 | 17.5 | 18.0 | 17.0 | 14.5 | 15.5 | 21.5 | 19.5 | 20.5 |
| 17 | 10.5 | 9.5 | 10.0 | 18.5 | 17.5 | 18.0 | 19.0 | 17.0 | 18.0 | 22.5 | 21.0 | 22.0 |
| 18 | 10.5 | 9.5 | 10.0 | 17.5 | 16.5 | 17.0 | 20.0 | 18.0 | 19.0 | 24.0 | 22.5 | 23.0 |
| 19 | 12.5 | 10.0 | 11.0 | 17.5 | 17.0 | 17.5 | 21.0 | 19.0 | 20.0 | 25.0 | 23.5 | 24.0 |
| 20 | 14.0 | 12.0 | 13.0 | 18.0 | 17.0 | 17.5 | 21.5 | 20.0 | 21.0 | 26.0 | 24.0 | 24.5 |
| 21 | 15.5 | 14.0 | 14.5 | 17.5 | 17.0 | 17.5 | 22.0 | 21.5 | 21.5 | 25.5 | 24.5 | 25.0 |
| 22 | 16.5 | 15.5 | 16.0 | 18.0 | 17.5 | 17.5 | 22.5 | 22.0 | 22.0 | 25.5 | 24.0 | 24.5 |
| 23 | 16.5 | 16.0 | 16.0 | 18.0 | 17.5 | 18.0 | 22.5 | 22.0 | 22.5 | 26.0 | 24.0 | 25.0 |
| 24 | 16.0 | 15.5 | 15.5 | 17.5 | 16.5 | 17.0 | 23.0 | 22.5 | 22.5 | 26.0 | 24.5 | 25.0 |
| 25 | 15.5 | 15.0 | 15.0 | --- | --- | --- | 22.5 | 22.0 | 22.0 | 27.5 | 25.5 | 26.5 |
| 26 | 14.5 | 14.0 | 14.0 | --- | --- | --- | 22.0 | 19.0 | 20.5 | 28.5 | 27.0 | 27.5 |
| 27 | 14.5 | 13.5 | 14.0 | --- | --- | --- | 19.0 | 18.5 | 19.0 | 28.5 | 28.0 | 28.5 |
| 28 | 15.5 | 14.5 | 15.0 | --- | --- | --- | 19.5 | 18.0 | 18.5 | 28.5 | 27.5 | 28.0 |
| 29 | 17.0 | 15.5 | 16.0 | --- | --- | --- | 21.5 | 19.0 | 20.0 | 28.5 | 28.0 | 28.5 |
| 30 | --- | --- | --- | --- | --- | --- | 21.5 | 20.5 | 21.0 | 28.5 | 28.0 | 28.0 |
| 31 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 28.0 | 27.5 | 28.0 |
| MONTH | 17.0 | 5.5 | 11.5 | 18.5 | 11.5 | 16.0 | 23.0 | 12.0 | 19.5 | 28.5 | 19.5 | 24.0 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 28.0 | 27.5 | 27.5 | --- | --- | --- | 31.5 | 30.5 | 31.0 | 29.5 | 28.5 | 29.0 |
| 2 | 28.0 | 27.0 | 27.5 | 32.5 | --- | --- | 31.0 | 30.5 | 30.5 | 30.0 | 29.0 | 29.5 |
| 3 | 28.0 | 27.5 | 28.0 | 32.0 | 31.5 | 32.0 | 31.0 | 30.0 | 30.5 | 30.0 | 29.0 | 29.5 |
| 4 | 28.5 | 27.5 | 28.0 | 32.5 | 31.5 | 32.0 | 30.0 | 29.0 | 29.5 | 30.0 | 29.5 | 30.0 |
| 5 | 29.0 | 28.0 | 28.5 | 32.5 | 31.5 | 32.0 | 29.5 | 28.5 | 29.0 | 30.5 | 29.5 | 30.0 |
| 6 | 29.0 | 28.0 | 28.5 | 32.5 | 31.5 | 32.0 | 30.5 | 29.0 | 29.5 | 29.5 | 29.0 | 29.5 |
| 7 | 29.0 | 28.0 | 28.5 | 32.5 | 31.5 | 32.0 | 30.5 | 29.5 | 30.0 | 29.5 | 29.0 | 29.0 |
| 8 | 29.0 | 28.0 | 29.0 | 32.5 | 31.5 | 32.0 | 31.0 | 30.0 | 30.5 | 29.0 | 28.5 | 28.5 |
| 9 | 28.0 | 27.0 | 27.5 | 32.5 | 31.5 | 32.0 | 31.0 | 30.0 | 30.5 | 29.0 | 28.0 | 28.5 |
| 10 | 28.5 | 27.0 | 27.5 | 32.5 | 31.5 | 32.0 | 31.0 | 30.5 | 30.5 | 29.5 | 28.5 | 29.0 |
| 11 | 28.5 | 27.5 | 28.0 | 32.5 | 31.5 | 32.0 | 30.5 | 30.0 | 30.0 | 29.0 | 28.5 | 29.0 |
| 12 | 28.5 | --- | --- | 32.5 | 31.5 | 32.0 | 30.5 | 30.0 | 30.0 | 29.5 | 28.5 | 29.0 |
| 13 | 28.5 | 28.0 | 28.5 | 32.5 | 31.5 | 32.0 | 31.0 | 30.0 | 30.5 | 29.0 | 28.5 | 29.0 |
| 14 | 28.5 | 27.5 | 28.0 | 32.0 | 31.5 | 31.5 | 31.0 | 30.0 | 30.5 | 29.5 | 28.5 | 29.0 |
| 15 | 29.0 | 28.0 | 28.5 | 32.5 | 31.5 | 32.0 | 30.5 | 29.5 | 30.0 | 30.0 | 29.0 | 29.5 |
| 16 | 29.0 | 28.5 | 29.0 | 32.5 | 31.5 | 32.0 | 30.0 | 29.5 | 29.5 | 29.5 | 29.0 | 29.0 |
| 17 | 29.5 | 28.5 | 29.0 | 32.0 | 31.0 | 31.5 | 30.0 | 29.5 | 29.5 | 29.5 | 28.5 | 29.0 |
| 18 | 30.0 | 28.5 | 29.5 | 32.5 | 31.5 | 31.5 | 30.5 | 29.5 | 30.0 | 29.5 | 28.5 | 29.0 |
| 19 | 31.0 | 29.5 | 30.0 | 32.0 | 31.0 | 31.5 | 30.5 | 29.5 | 30.0 | 29.0 | 28.5 | 28.5 |
| 20 | 30.5 | 29.5 | 30.0 | 32.0 | 31.0 | 31.5 | 30.5 | 29.5 | 30.0 | 28.5 | 28.0 | 28.5 |
| 21 | 29.5 | 28.0 | 29.0 | 31.5 | 31.0 | 31.5 | 31.0 | 29.5 | 30.0 | 28.5 | 28.0 | 28.0 |
| 22 | 29.0 | 27.5 | 28.5 | 31.5 | 31.0 | 31.0 | 31.5 | 30.5 | 30.5 | 28.5 | 28.0 | 28.5 |
| 23 | 30.5 | 28.0 | 29.0 | 31.5 | 31.0 | 31.0 | 31.0 | 30.5 | 30.5 | 29.0 | 28.0 | 28.5 |
| 24 | 30.5 | 29.0 | 30.0 | 31.0 | 30.5 | 31.0 | 31.5 | 30.5 | 31.0 | 29.0 | 28.0 | 28.5 |
| 25 | 31.0 | 30.0 | 30.5 | 31.5 | 30.5 | 31.0 | 31.0 | 30.0 | 30.5 | 28.5 | 28.0 | 28.0 |
| 26 | 32.0 | --- | --- | 31.5 | 30.5 | 31.0 | 31.0 | 30.0 | 30.5 | 28.0 | 26.0 | 27.0 |
| 27 | --- | --- | --- | 31.5 | 31.0 | 31.0 | 31.0 | 30.0 | 30.5 | 26.0 | 24.5 | 25.0 |
| 28 | --- | --- | --- | 31.0 | 30.0 | 30.5 | 29.5 | 28.0 | 29.0 | 24.5 | 22.5 | 23.5 |
| 29 | --- | --- | --- | 31.0 | 30.0 | 30.5 | 29.0 | 28.0 | 28.5 | 23.0 | 21.0 | 22.0 |
| 30 | --- | --- | --- | 31.5 | 30.5 | 31.0 | 29.5 | 28.5 | 29.0 | 21.0 | 18.0 | 19.0 |
| 31 | --- | --- | --- | 31.5 | 30.5 | 31.0 | 29.5 | 28.5 | 29.0 | --- | --- | --- |
| MONTH | 32.0 | 27.0 | 28.5 | 32.5 | 30.0 | 31.5 | 31.5 | 28.0 | 30.0 | 30.5 | 18.0 | 28.0 |

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

### OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 4.0 | 2.9 | 3.4 | 3.9 | .5 | 2.8 | 5.7 | 5.1 | 5.3 | 6.2 | 5.7 | 5.9 |
| 2 | 4.2 | 2.9 | 3.4 | 4.4 | 3.1 | 4.0 | 6.1 | 5.4 | 5.7 | 6.6 | 5.7 | 6.1 |
| 3 | 4.2 | 3.0 | 3.6 | 5.3 | 4.5 | 5.0 | 6.3 | 5.5 | 5.8 | 6.9 | 6.0 | 6.5 |
| 4 | 4.1 | 3.1 | 3.6 | 5.4 | 4.9 | 5.0 | 6.3 | 5.5 | 5.9 | 7.0 | 6.7 | 6.9 |
| 5 | 3.9 | 2.9 | 3.4 | 5.5 | 4.7 | 4.9 | 6.0 | 5.4 | 5.6 | 6.9 | 6.0 | 6.3 |
| 6 | 4.0 | 3.0 | 3.4 | 5.2 | 4.7 | 5.0 | 5.7 | 5.2 | 5.4 | 6.7 | 6.1 | 6.3 |
| 7 | 4.3 | 3.0 | 3.6 | 5.2 | 4.9 | 5.1 | 5.3 | 4.8 | 5.0 | 6.7 | 5.8 | 6.1 |
| 8 | 4.3 | 3.0 | 3.6 | 5.0 | 4.3 | 4.7 | 5.0 | 4.7 | 4.9 | 6.5 | 5.9 | 6.2 |
| 9 | 3.6 | 2.8 | 3.2 | 4.5 | 4.0 | 4.2 | 5.3 | 4.8 | 5.0 | 6.2 | 5.7 | 6.0 |
| 10 | 3.6 | 2.6 | 3.1 | 4.7 | 3.8 | 4.2 | 5.1 | 4.7 | 4.9 | 6.4 | 5.3 | 6.0 |
| 11 | 3.7 | 2.9 | 3.3 | 4.7 | 3.9 | 4.5 | 4.8 | 4.1 | 4.5 | 5.6 | 5.2 | 5.4 |
| 12 | 3.6 | 2.6 | 3.1 | 4.8 | 4.2 | 4.4 | 4.6 | 4.2 | 4.4 | 5.8 | 5.5 | 5.7 |
| 13 | 3.5 | 2.8 | 3.1 | 5.3 | 4.6 | 4.9 | 4.8 | 2.1 | 3.7 | 5.7 | 5.6 | 5.6 |
| 14 | 4.0 | 2.8 | 3.3 | 5.5 | 5.1 | 5.3 | 6.5 | .7 | 3.4 | 5.8 | 4.9 | 5.4 |
| 15 | 3.3 | 2.7 | 3.0 | 5.6 | 5.0 | 5.2 | 5.6 | 2.2 | 4.5 | 5.1 | 4.7 | 4.9 |
| 16 | 2.7 | 2.3 | 2.6 | 5.2 | 4.6 | 4.9 | 6.9 | 5.8 | 6.3 | 4.8 | 4.5 | 4.7 |
| 17 | 2.3 | .1 | .9 | 5.0 | 4.6 | 4.8 | 7.1 | 6.2 | 6.5 | 4.5 | 4.2 | 4.4 |
| 18 | 2.1 | .2 | 1.1 | 4.6 | 4.1 | 4.4 | 7.1 | 6.3 | 6.6 | 4.3 | 4.2 | 4.3 |
| 19 | --- | 2.2 | --- | 4.1 | 3.7 | 3.9 | 7.2 | 6.5 | 6.8 | 4.4 | 4.2 | 4.3 |
| 20 | --- | --- | --- | 3.9 | 3.2 | 3.6 | 7.2 | 6.0 | 6.6 | 5.0 | 4.4 | 4.7 |
| 21 | --- | --- | --- | 3.7 | 3.3 | 3.5 | 6.1 | 4.9 | 5.4 | 5.9 | 4.1 | 5.0 |
| 22 | --- | --- | --- | 3.6 | 3.3 | 3.5 | 5.3 | 4.4 | 4.9 | 7.0 | 5.0 | 6.3 |
| 23 | 3.3 | 2.6 | 3.0 | 4.1 | 3.3 | 3.6 | 5.6 | 3.7 | --- | 7.9 | 6.4 | 7.3 |
| 24 | 3.1 | 2.7 | 2.9 | 4.4 | 3.8 | 4.0 | 5.6 | 3.3 | 4.3 | 8.6 | 7.8 | 8.3 |
| 25 | 3.6 | 2.7 | 3.0 | 4.8 | 4.5 | 4.6 | 6.3 | 4.3 | 5.3 | 8.6 | 7.6 | 8.2 |
| 26 | 3.7 | 3.4 | 3.6 | 5.2 | 4.6 | 4.8 | 6.9 | 6.4 | 6.6 | 7.6 | 7.2 | 7.3 |
| 27 | 4.1 | 3.7 | 3.9 | 4.8 | 4.3 | 4.6 | 7.0 | 7.0 | 7.0 | 7.6 | 6.9 | 7.3 |
| 28 | 4.1 | 3.7 | 3.8 | 4.9 | 4.3 | 4.6 | 7.1 | 6.4 | 6.9 | 8.2 | 7.4 | 7.9 |
| 29 | 4.0 | 3.6 | 3.8 | 5.3 | 4.7 | 5.0 | 6.5 | 6.0 | 6.2 | 8.4 | 8.0 | 8.2 |
| 30 | 4.2 | 3.5 | 3.7 | 5.5 | 5.0 | 5.2 | 5.9 | 5.3 | 5.7 | 8.4 | 7.6 | 8.0 |
| 31 | 3.7 | .2 | 2.2 | --- | --- | --- | 6.5 | 5.3 | 6.0 | 8.3 | 7.6 | 8.0 |
| MONTH | 4.3 | .1 | 3.1 | 5.6 | .5 | 4.5 | 7.2 | .7 | 5.5 | 8.6 | 4.1 | 6.2 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | 9.7 | 7.8 | 9.0 | 5.8 | 4.6 | 5.1 | --- | --- | --- | 3.8 | 3.3 | 3.6 |
| 2 | 9.2 | 8.3 | 8.9 | 6.1 | 5.4 | 5.7 | --- | --- | --- | 4.1 | 2.8 | 3.5 |
| 3 | 8.4 | 6.9 | 8.0 | 6.1 | 5.5 | 5.7 | --- | --- | --- | 3.6 | .0 | 1.9 |
| 4 | 7.4 | 6.3 | 7.0 | 6.1 | 5.9 | 6.0 | --- | --- | --- | 2.4 | 1.7 | 2.0 |
| 5 | 7.1 | 5.8 | 6.6 | 6.1 | 5.6 | 5.9 | --- | --- | --- | 3.3 | .7 | 2.8 |
| 6 | 6.8 | 4.1 | 5.8 | 6.1 | 5.4 | 5.7 | --- | --- | --- | 3.9 | 3.1 | 3.5 |
| 7 | 6.5 | 4.1 | 5.3 | 5.6 | 2.9 | 4.8 | --- | --- | --- | 5.1 | 3.6 | 4.4 |
| 8 | 7.3 | 5.5 | 6.3 | 4.1 | 2.7 | 3.8 | --- | --- | --- | 3.7 | 3.0 | 3.4 |
| 9 | 9.2 | 7.3 | 7.9 | 5.0 | 3.9 | 4.2 | --- | --- | --- | 3.5 | 1.5 | 2.8 |
| 10 | 9.7 | 9.1 | 9.4 | 5.1 | 3.8 | 4.2 | --- | --- | --- | 3.4 | 1.5 | 2.5 |
| 11 | 9.2 | 9.1 | 9.2 | 4.3 | 3.7 | 4.0 | --- | --- | --- | 3.3 | 1.6 | 2.6 |
| 12 | 9.6 | 7.8 | 8.6 | 4.5 | 3.8 | 4.2 | --- | --- | --- | 4.1 | 3.0 | 3.6 |
| 13 | 9.6 | 8.5 | 9.1 | 4.5 | 3.9 | 4.1 | --- | --- | --- | 4.2 | 3.5 | 3.9 |
| 14 | 8.4 | 6.0 | 6.7 | 4.3 | 3.8 | 4.1 | 5.7 | 4.5 | 5.0 | 3.9 | 2.8 | 3.5 |
| 15 | 7.2 | 4.0 | 5.7 | 4.4 | 3.9 | 4.2 | 5.9 | 5.3 | 5.6 | 4.9 | 2.8 | 4.0 |
| 16 | 6.2 | 5.2 | 5.9 | 4.3 | 3.0 | 3.6 | 5.7 | 5.4 | 5.6 | 4.5 | 2.3 | 3.7 |
| 17 | 6.7 | 6.1 | 6.4 | 3.8 | 3.0 | 3.4 | 5.3 | 4.1 | 4.5 | 3.4 | 2.8 | 3.1 |
| 18 | 7.3 | 6.6 | 7.0 | 3.9 | 3.3 | 3.6 | 4.5 | 3.5 | 3.9 | 3.7 | 3.0 | 3.5 |
| 19 | 7.4 | 6.1 | 6.9 | 4.2 | 3.4 | 3.8 | 4.1 | 3.5 | 3.8 | 3.0 | 2.5 | 2.8 |
| 20 | 6.5 | 5.4 | 6.2 | 4.4 | 3.6 | 4.0 | 4.0 | 3.4 | 3.7 | 3.0 | 2.3 | 2.5 |
| 21 | 6.5 | 4.9 | 5.8 | 4.5 | 3.5 | 4.0 | 4.1 | 3.2 | 3.6 | 3.1 | 2.3 | 2.5 |
| 22 | 5.5 | 4.8 | 5.1 | 4.5 | 3.5 | 4.1 | 4.2 | 3.3 | 3.7 | 3.4 | 2.6 | 3.0 |
| 23 | 5.2 | 4.3 | 4.8 | 3.9 | 3.3 | 3.7 | 4.2 | 3.2 | 3.7 | 3.3 | 2.0 | 2.8 |
| 24 | 5.2 | 4.4 | 4.7 | 3.7 | 3.3 | 3.5 | 3.5 | 2.7 | 3.1 | 3.6 | 1.9 | 2.5 |
| 25 | 5.6 | 4.8 | 5.2 | --- | --- | --- | 4.0 | 2.4 | 3.2 | 3.1 | 1.9 | 2.4 |
| 26 | 5.5 | 4.9 | 5.2 | --- | --- | --- | 2.7 | .1 | 1.7 | 3.5 | 2.0 | 2.9 |
| 27 | 5.4 | 4.9 | 5.1 | --- | --- | --- | 3.1 | .6 | 1.8 | 3.8 | 3.2 | 3.4 |
| 28 | 5.5 | 4.7 | 5.1 | --- | --- | --- | 4.4 | 3.2 | 4.0 | 3.9 | 3.4 | 3.6 |
| 29 | 5.2 | 4.5 | 4.9 | --- | --- | --- | 4.6 | 3.9 | 4.3 | 3.8 | 3.0 | 3.5 |
| 30 | --- | --- | --- | --- | --- | --- | 4.2 | 3.7 | 3.9 | 3.6 | 2.8 | 3.2 |
| 31 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3.7 | 2.7 | 3.2 |
| MONTH | 9.7 | 4.0 | 6.6 | 6.1 | 2.7 | 4.4 | 5.9 | .1 | 3.8 | 5.1 | .0 | 3.1 |

## 08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

### OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 3.6 | 2.8 | 3.1 | --- | --- | --- | 3.5 | 1.8 | 2.3 | 2.7 | 1.7 | 2.1 |
| 2 | 3.6 | 2.9 | 3.2 | 5.8 | --- | --- | 2.8 | 1.2 | 2.1 | 2.8 | 1.7 | 2.2 |
| 3 | 3.7 | 3.1 | 3.3 | 5.5 | 1.5 | 4.5 | 3.1 | 1.9 | 2.3 | 2.7 | 1.7 | 2.2 |
| 4 | 3.9 | 3.2 | 3.6 | 5.9 | 3.5 | 4.5 | 3.0 | 1.4 | 2.2 | 3.1 | 1.9 | 2.4 |
| 5 | 4.5 | 1.0 | 3.6 | 6.5 | 3.2 | 4.5 | 3.3 | 1.8 | 2.5 | 2.9 | 1.8 | 2.4 |
| 6 | 5.3 | 2.9 | 3.8 | 6.3 | 3.3 | 4.5 | 4.9 | 2.3 | 3.4 | 2.3 | 1.5 | 1.9 |
| 7 | 4.6 | 2.5 | 3.5 | 6.7 | 3.1 | 4.5 | 5.3 | 2.3 | 3.6 | 2.3 | 1.4 | 1.8 |
| 8 | 3.8 | 2.5 | 3.1 | 6.9 | 3.1 | 4.7 | 3.0 | 1.8 | 2.5 | 1.8 | 1.0 | 1.5 |
| 9 | 3.6 | 2.4 | 3.0 | 6.5 | 3.2 | 4.8 | 2.3 | 1.5 | 1.9 | 2.1 | 1.3 | 1.6 |
| 10 | 4.6 | 2.6 | 3.5 | 6.7 | 3.4 | 4.9 | 3.2 | 1.6 | 2.2 | 2.6 | 1.4 | 2.0 |
| 11 | 5.0 | 2.9 | 3.9 | 6.7 | 2.8 | 4.4 | 3.2 | 1.4 | 2.2 | 2.3 | 1.6 | 2.0 |
| 12 | 5.0 | --- | --- | 6.3 | 2.8 | 4.2 | 2.9 | 1.5 | 2.1 | 2.3 | 1.5 | 1.9 |
| 13 | 6.1 | 3.5 | 4.6 | 6.0 | 2.7 | 4.0 | 3.1 | 1.5 | 2.2 | 2.4 | 1.4 | 1.9 |
| 14 | 5.0 | 2.7 | 3.9 | 5.9 | 2.4 | 3.8 | 3.3 | 1.9 | 2.4 | 2.4 | 1.5 | 1.9 |
| 15 | 4.0 | 2.6 | 3.4 | 5.9 | 2.2 | 3.7 | 2.9 | 1.8 | 2.3 | 2.5 | 1.3 | 1.8 |
| 16 | 3.8 | 2.7 | 3.2 | 6.1 | 2.2 | 3.8 | 3.4 | 1.9 | 2.4 | 2.1 | 1.2 | 1.7 |
| 17 | 4.0 | 2.8 | 3.4 | 4.7 | 2.3 | 3.3 | 3.3 | 1.9 | 2.5 | 2.6 | 1.4 | 2.0 |
| 18 | 4.1 | 2.8 | 3.4 | 4.3 | 2.0 | 2.9 | 3.6 | 2.0 | 2.6 | 2.4 | 1.6 | 2.0 |
| 19 | 3.8 | 2.6 | 3.2 | 3.7 | 1.7 | 2.5 | 4.1 | 2.0 | 2.8 | 2.2 | 1.6 | 1.8 |
| 20 | 3.0 | 2.5 | 2.7 | 3.1 | 1.5 | 2.1 | 3.9 | 2.0 | 2.8 | 2.0 | 1.5 | 1.8 |
| 21 | 3.1 | .1 | 1.1 | 3.3 | 1.5 | 2.2 | 4.3 | 2.0 | 3.0 | 2.0 | 1.5 | 1.7 |
| 22 | 2.5 | .0 | .9 | 3.4 | 1.4 | 2.2 | 3.2 | 1.9 | 2.4 | 2.2 | 1.4 | 1.8 |
| 23 | 2.8 | 2.3 | 2.7 | 3.5 | 1.4 | 2.4 | 2.8 | 1.6 | 2.0 | 2.1 | 1.5 | 1.7 |
| 24 | 2.8 | 2.1 | 2.4 | 3.2 | 1.6 | 2.2 | 2.8 | 1.4 | 2.0 | 2.3 | 1.4 | 1.8 |
| 25 | 2.7 | 2.3 | 2.5 | 3.1 | 1.6 | 2.1 | 2.8 | 1.2 | 2.0 | 2.2 | 1.5 | 1.8 |
| 26 | 2.5 | 2.0 | 2.3 | 2.5 | 1.4 | 1.8 | 2.8 | 1.4 | 2.0 | 2.1 | 1.5 | 1.8 |
| 27 | --- | --- | --- | 2.7 | 1.3 | 1.7 | 3.2 | 1.6 | 2.3 | 2.5 | 1.7 | 2.0 |
| 28 | --- | --- | --- | 2.5 | 1.2 | 1.8 | 2.4 | 1.6 | 1.8 | 1.9 | .9 | 1.3 |
| 29 | --- | --- | --- | 3.0 | 1.2 | 2.1 | 2.2 | 1.4 | 1.8 | 2.3 | .8 | 1.5 |
| 30 | --- | --- | --- | 3.3 | 1.6 | 2.4 | 2.1 | 1.6 | 1.9 | 3.5 | .5 | 2.7 |
| 31 | --- | --- | --- | 2.3 | .1 | 1.3 | 2.6 | 1.6 | 2.1 | --- | --- | --- |
| MONTH | 6.1 | .0 | 3.1 | 6.9 | .1 | 3.2 | 5.3 | 1.2 | 2.3 | 3.5 | .5 | 1.9 |

## 08062650 CEDAR CREEK RESERVOIR SPILLWAY OUTFLOW NEAR TRINIDAD, TX

LOCATION (revised).--Lat 32°14'16", long 96°08'36", Henderson County, Hydrologic Unit 12030107, at upstream side of highway embankment near left end of bridge on State Highway 274, 0.2 mi (0.3 km) downstream from Cedar Creek Reservoir Spillway, 1.8 mi (2.9 km) upstream from mouth of cut channel at Trinity River, and 7.6 mi (12.2 km) north of Trinidad.

DRAINAGE AREA.--1,007 mi² (2,608 km²), that of Cedar Creek Reservoir.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Jan. 20, 1980, at site 385A (117 m) to right of present gage at present datum. Mar. 10, 1965, to July 8, 1966, nonrecording gage at 379 ft (116 m) to right of present gage at present datum. Auxiliary water-stage recorder 6,000 ft (1,830 m) downstream from base gage at same datum.

REMARKS.--Records fair. Except for a small amount of local runoff and seepage around gates, all flow is water released from Cedar Creek Reservoir (station 08063010). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--15 years, 548 ft³/s (15.52 m³/s), 397,000 acre-ft/yr (490 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 110,000 ft³/s (3,120 m³/s) June 4, 1973, elevation, 300.75 ft (91.669 m); no flow at times each year except 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 27,300 ft³/s (773 m³/s) Jan. 22 at 1115 hours, elevation, 286.26 ft (87.252 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .08 | .25 | .45 | .30 | .25 | .20 | .10 | .45 | .08 | .25 | .00 | .00 |
| 2 | .00 | .25 | .45 | .30 | .17 | .20 | .10 | .45 | .08 | .42 | .00 | .00 |
| 3 | .00 | .25 | .45 | .30 | .17 | .20 | .10 | .45 | .08 | .33 | .00 | .00 |
| 4 | .00 | .25 | .45 | .30 | .17 | .20 | .10 | .45 | .08 | .25 | .00 | .00 |
| 5 | .00 | .25 | .45 | .30 | .15 | .20 | .10 | .45 | .08 | .17 | .00 | .00 |
| 6 | .73 | .25 | .45 | .30 | .10 | .20 | .10 | .45 | .08 | .17 | .00 | .00 |
| 7 | .25 | .25 | .45 | .30 | .10 | .20 | .10 | .46 | .08 | .17 | .00 | .00 |
| 8 | .10 | .25 | .45 | .30 | 4150 | .20 | .10 | 1.4 | .42 | .08 | .00 | .00 |
| 9 | .12 | .33 | .45 | .30 | 5180 | .20 | .10 | 1.4 | .25 | .00 | .00 | .00 |
| 10 | .08 | .40 | .45 | .30 | 2220 | .17 | .10 | .50 | .08 | .00 | .00 | .00 |
| 11 | .00 | .40 | .50 | .30 | 1780 | .17 | .10 | .50 | .08 | .00 | .00 | .00 |
| 12 | .00 | .40 | .50 | .30 | 1040 | .08 | .40 | .50 | .08 | .00 | .00 | .00 |
| 13 | .08 | .40 | .50 | .30 | .25 | .14 | 3260 | 741 | .08 | .00 | .00 | .00 |
| 14 | .22 | .40 | .50 | .30 | .20 | .08 | 4420 | 1480 | .08 | .00 | .00 | .00 |
| 15 | .10 | .40 | .50 | .30 | 74 | .08 | 2370 | 2370 | .08 | .00 | .00 | .00 |
| 16 | .27 | .40 | .50 | .30 | 815 | .08 | 2000 | 4520 | .08 | .00 | .00 | 44 |
| 17 | .25 | .40 | .50 | .30 | .25 | .42 | 666 | 2890 | .08 | .00 | .00 | 1.4 |
| 18 | .19 | .40 | .50 | .30 | .25 | 1040 | .78 | 3560 | .08 | .00 | 106 | .42 |
| 19 | .17 | .40 | .50 | .30 | .25 | .08 | .45 | 1560 | .08 | .00 | .25 | .86 |
| 20 | .17 | .40 | .50 | .50 | .25 | .25 | .45 | .08 | .42 | .00 | .00 | .33 |
| 21 | .17 | .40 | .75 | .60 | .20 | .17 | .45 | .00 | .25 | .00 | .00 | .25 |
| 22 | .31 | .40 | 5.0 | 12600 | .20 | .08 | .45 | .00 | .25 | .00 | .00 | .17 |
| 23 | .11 | .40 | 2.5 | 10600 | .20 | .08 | .45 | .00 | .17 | .00 | .00 | .17 |
| 24 | .09 | .40 | 1.0 | 7720 | .20 | .08 | .36 | .00 | .08 | .00 | .00 | .17 |
| 25 | .09 | .40 | .40 | 3920 | .20 | .08 | 1040 | .08 | .08 | .00 | .00 | .08 |
| 26 | .09 | .45 | .40 | 370 | .20 | .08 | 889 | .08 | .08 | .00 | .00 | .08 |
| 27 | 1.2 | .45 | .35 | 1190 | .20 | .17 | .70 | .08 | .08 | .00 | .00 | .08 |
| 28 | .36 | .45 | .35 | .50 | .20 | 1480 | .45 | .08 | .17 | .00 | .00 | .08 |
| 29 | .28 | .45 | .35 | .60 | .20 | 1780 | .45 | .00 | .17 | .00 | .00 | .25 |
| 30 | .86 | .45 | .35 | 296 | --- | .20 | .45 | .00 | .17 | .00 | .00 | .86 |
| 31 | .35 | --- | .35 | 1040 | --- | .10 | --- | .00 | --- | .00 | .00 | --- |
| TOTAL | 6.72 | 10.98 | 21.30 | 37743.90 | 15263.36 | 4304.39 | 14651.94 | 17128.86 | 3.95 | 1.84 | 106.25 | 49.20 |
| MEAN | .22 | .37 | .69 | 1218 | 526 | 139 | 488 | 553 | .13 | .059 | 3.43 | 1.64 |
| MAX | 1.2 | .45 | 5.0 | 12600 | 5180 | 1780 | 4420 | 4520 | .42 | .42 | 106 | 44 |
| MIN | .00 | .25 | .35 | .30 | .10 | .08 | .10 | .00 | .08 | .00 | .00 | .00 |
| AC-FT | 13 | 22 | 42 | 74870 | 30270 | 8540 | 29060 | 33980 | 7.8 | 3.6 | 211 | 98 |

CAL YR 1979 TOTAL 145608.25 MEAN 399 MAX 15200 MIN .00 AC-FT 288800
WTR YR 1980 TOTAL 89292.69 MEAN 244 MAX 12600 MIN .00 AC-FT 177100

## 08062700 TRINITY RIVER AT TRINIDAD, TX
(National stream-quality accounting network)

**LOCATION.**--Lat 32°08'05", long 96°06'20", Henderson County, Hydrologic Unit 12030105, on left bank at pumping station of Texas Power and Light Co., near southwest boundary of Trinidad, 0.5 mi (0.8 km) downstream from St. Louis Southwestern Railway Lines bridge, 0.9 mi (1.4 km) downstream from bridge on State Highway 31, 8 mi (13 km) upstream from Cedar Creek, and at mile 391.2 (629.4 km).

**DRAINAGE AREA.**--8,538 mi² (22,113 km²), not including 1,007 mi² (2,608 km²) upstream from Cedar Creek Reservoir.

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1964 to current year. Records of gage height collected in this vicinity for period October 1913 to September 1915 are contained in reports of Corps of Engineers, and records collected since October 1915 are contained in reports of the National Weather Service.

**GAGE.**--Water-stage recorder. Datum of gage is 239.21 ft (72.911 m) National Geodetic Vertical Datum of 1929. Prior to May 3, 1967, at site 0.9 mi (1.4 km) upstream at datum 1.28 ft (0.390 m) higher.

**REMARKS.**--Water-discharge records good. For regulation by upstream reservoirs, see Trinity River near Rosser (station 08062500). The spillway outflow from Cedar Creek Reservoir (station 08062650) enters the Trinity River 13 mi (21 km) upstream from station. Many diversions above station for municipal supply for the cities of Fort Worth, Dallas, and several small towns. Low flows are maintained by sewage effluent from the Dallas-Fort Worth metroplex. The National Weather Service operates a gage-height telemeter at this station.

**AVERAGE DISCHARGE.**--16 years, 3,494 ft³/s (98.95 m³/s), 2,531,000 acre-ft/yr (3.12 km³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 83,000 ft³/s (2,350 m³/s) May 8, 1969, gage height, 44.10 ft (13.442 m); minimum daily, 312 ft³/s (8.84 m³/s) Aug. 9, 1972.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since at least 1908, 49.8 ft (15.18 m) Apr. 25, 1942 (present site and datum), from records of the National Weather Service. Flood in 1908 reached a stage of 48.3 ft (14.72 m), present site and datum, from records of the National Weather Service.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 17,800 ft³/s (504 m³/s) Jan. 24 at 1800 hours, gage height, 34.00 ft (10.363 m); minimum daily, 458 ft³/s (13.0 m³/s) Oct. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 509 | 1700 | 497 | 630 | 1630 | 709 | 1260 | 878 | 834 | 539 | 622 | 514 |
| 2 | 495 | 2180 | 483 | 600 | 1180 | 692 | 900 | 836 | 805 | 535 | 549 | 488 |
| 3 | 502 | 1180 | 474 | 580 | 948 | 672 | 778 | 1060 | 779 | 538 | 552 | 460 |
| 4 | 508 | 724 | 488 | 560 | 926 | 675 | 731 | 2650 | 765 | 545 | 512 | 478 |
| 5 | 502 | 599 | 493 | 550 | 924 | 660 | 1210 | 2350 | 762 | 541 | 498 | 492 |
| 6 | 496 | 547 | 507 | 545 | 909 | 657 | 1160 | 1020 | 745 | 524 | 523 | 493 |
| 7 | 500 | 536 | 517 | 540 | 881 | 653 | 834 | 896 | 731 | 500 | 537 | 488 |
| 8 | 494 | 526 | 525 | 535 | 2650 | 648 | 794 | 2050 | 724 | 493 | 515 | 486 |
| 9 | 480 | 535 | 512 | 530 | 7260 | 663 | 775 | 1620 | 722 | 500 | 518 | 490 |
| 10 | 481 | 547 | 502 | 525 | 8300 | 641 | 778 | 1800 | 704 | 521 | 525 | 551 |
| 11 | 490 | 609 | 501 | 520 | 6370 | 623 | 771 | 1670 | 713 | 529 | 516 | 703 |
| 12 | 492 | 624 | 530 | 515 | 4500 | 642 | 756 | 1070 | 718 | 531 | 509 | 773 |
| 13 | 469 | 582 | 557 | 513 | 2650 | 661 | 2650 | 1170 | 699 | 530 | 526 | 597 |
| 14 | 458 | 551 | 1360 | 508 | 1760 | 679 | 6660 | 2910 | 680 | 514 | 534 | 535 |
| 15 | 472 | 550 | 1970 | 508 | 1400 | 659 | 8960 | 3540 | 669 | 498 | 523 | 491 |
| 16 | 493 | 529 | 1150 | 516 | 2310 | 637 | 6720 | 6310 | 653 | 500 | 522 | 471 |
| 17 | 599 | 525 | 707 | 518 | 1180 | 1380 | 3980 | 9850 | 640 | 508 | 529 | 502 |
| 18 | 1620 | 535 | 613 | 508 | 1140 | 1820 | 1350 | 11000 | 640 | 515 | 526 | 493 |
| 19 | 1210 | 538 | 574 | 506 | 1120 | 1260 | 1060 | 12000 | 600 | 514 | 557 | 492 |
| 20 | 691 | 509 | 555 | 672 | 1050 | 827 | 952 | 10200 | 594 | 512 | 523 | 501 |
| 21 | 573 | 527 | 551 | 1340 | 950 | 778 | 895 | 5100 | 600 | 513 | 521 | 495 |
| 22 | 546 | 546 | 1210 | 6590 | 867 | 755 | 846 | 2620 | 1470 | 499 | 522 | 489 |
| 23 | 534 | 627 | 1300 | 13500 | 834 | 752 | 815 | 1520 | 1460 | 519 | 513 | 475 |
| 24 | 704 | 604 | 2830 | 17800 | 794 | 735 | 800 | 1180 | 1060 | 567 | 522 | 482 |
| 25 | 655 | 532 | 2800 | 17400 | 754 | 767 | 1430 | 1160 | 901 | 546 | 510 | 494 |
| 26 | 586 | 499 | 2490 | 13700 | 762 | 773 | 3110 | 1090 | 727 | 533 | 498 | 494 |
| 27 | 535 | 485 | 1910 | 7530 | 823 | 709 | 2550 | 959 | 631 | 523 | 501 | 520 |
| 28 | 519 | 494 | 1130 | 2880 | 781 | 2100 | 1730 | 891 | 593 | 529 | 504 | 627 |
| 29 | 503 | 500 | 851 | 1460 | 719 | 2570 | 1150 | 865 | 568 | 560 | 519 | 1250 |
| 30 | 522 | 498 | 681 | 1230 | --- | 2770 | 951 | 857 | 550 | 588 | 540 | 2140 |
| 31 | 642 | --- | 660 | 2300 | --- | 1670 | --- | 861 | --- | 551 | 529 | --- |
| TOTAL | 18280 | 19938 | 29928 | 96609 | 56372 | 30237 | 57356 | 91983 | 22737 | 16315 | 16295 | 17964 |
| MEAN | 590 | 665 | 965 | 3116 | 1944 | 975 | 1912 | 2967 | 758 | 526 | 526 | 599 |
| MAX | 1620 | 2180 | 2830 | 17800 | 8300 | 2770 | 8960 | 12000 | 1470 | 588 | 622 | 2140 |
| MIN | 458 | 485 | 474 | 506 | 719 | 623 | 731 | 836 | 550 | 493 | 498 | 460 |
| AC-FT | 36260 | 39550 | 59360 | 191600 | 111800 | 59980 | 113800 | 182400 | 45100 | 32360 | 32320 | 35630 |

CAL YR 1979 TOTAL 1026541 MEAN 2812 MAX 25200 MIN 458 AC-FT 2036000
WTR YR 1980 TOTAL 474014 MEAN 1295 MAX 17800 MIN 458 AC-FT 940200

## 08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year.
SPECIFIC CONDUCTANCE: November 1977 to Current year.
WATER TEMPERATURES: November 1977 to Current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equation developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,000 micromhos Dec. 28, 1977; minimum daily, 241 micromhos Mar. 28, 1980.
WATER TEMPERATURES: Maximum daily, 34.0°C July 17, 1979, and July 9, 13, 1980; minimum daily 3.5°C Jan. 5, 1979.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 883 micromhos Mar. 23; minimum daily, 241 micromhos Mar. 28.
WATER TEMPERATURES: Maximum daily, 34.0°C July 9, 13; minimum daily, 6.0°C Feb. 10.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TURBIDITY (NTU) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) | STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>22... | 1320 | 541 | 545 | 7.4 | 23.0 | 18 | 3.9 | 45 | 18 | 2400 | 380 |
| NOV<br>15... | 0930 | 545 | 805 | 7.5 | 12.0 | 1.1 | 6.2 | 56 | 19 | 220 | K15 |
| DEC<br>11... | 0940 | 492 | 845 | 7.5 | 13.0 | 9.6 | 6.2 | 59 | 12 | 100 | 23 |
| JAN<br>09... | 1140 | 560 | 770 | 7.5 | 9.0 | 8.5 | 7.0 | 60 | 20 | 48 | 23 |
| FEB<br>12... | 1630 | 4380 | 358 | 7.6 | 7.0 | 78 | 10.8 | 89 | 11 | 1300 | 920 |
| MAR<br>19... | 1500 | 983 | 630 | 7.4 | 16.0 | 96 | 5.0 | 51 | 20 | 400 | 430 |
| APR<br>23... | 1650 | 815 | 790 | 7.4 | 23.0 | 33 | 4.8 | 56 | 41 | 61 | K40 |
| MAY<br>13... | 1515 | 1040 | 570 | 7.5 | 24.0 | 120 | 2.2 | 26 | 25 | 140 | 100 |
| JUN<br>03... | 1415 | 753 | 755 | 7.8 | 28.0 | 4.3 | 5.3 | 67 | 23 | 32 | K6 |
| JUL<br>15... | 1320 | 490 | 840 | 7.5 | 32.5 | 32 | 4.3 | 58 | 9.0 | 21 | 22 |
| AUG<br>20... | 1330 | 496 | 836 | 7.2 | 30.0 | 16 | 1.2 | 16 | 17 | 280 | 210 |
| SEP<br>11... | 1145 | 667 | 820 | 7.3 | 28.0 | 22 | 2.6 | 33 | 20 | 4000 | 360 |

| DATE | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT<br>22... | 130 | 5 | 44 | 4.4 | 51 | 2.0 | 8.4 | 150 | 0 | 60 | 42 |
| NOV<br>15... | 150 | 0 | 52 | 5.0 | 93 | 3.3 | 15 | 200 | 0 | 100 | 71 |
| DEC<br>11... | 150 | 0 | 51 | 6.1 | 110 | 3.9 | 13 | 190 | 0 | 110 | 83 |
| JAN<br>09... | 160 | 0 | 55 | 5.3 | 86 | 3.0 | 11 | 200 | 0 | 100 | 70 |
| FEB<br>12... | 110 | 16 | 39 | 4.1 | 29 | 1.2 | 5.3 | 120 | 0 | 48 | 25 |
| MAR<br>19... | 150 | 1 | 52 | 4.6 | 66 | 2.4 | 8.8 | 180 | 0 | 100 | 44 |
| APR<br>23... | 190 | 25 | 66 | 6.0 | 77 | 2.4 | 9.4 | 200 | 0 | 120 | 61 |
| MAY<br>13... | 160 | 21 | 54 | 5.1 | 61 | 2.1 | 7.0 | 170 | 0 | 83 | 45 |
| JUN<br>03... | 160 | 2 | 56 | 5.3 | 77 | 2.6 | 9.9 | 200 | 0 | 94 | 59 |
| JUL<br>15... | 140 | 0 | 45 | 5.5 | 110 | 4.1 | 12 | 180 | 0 | 110 | 86 |
| AUG<br>20... | 130 | 11 | 43 | 5.7 | 120 | 4.6 | 13 | 150 | 0 | 130 | 81 |
| SEP<br>11... | 120 | 0 | 40 | 5.5 | 110 | 4.3 | 13 | 170 | 0 | 110 | 81 |

## WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) | NITROGEN, AMMONIA TOTAL (MG/L AS N) | NITROGEN, AMMONIA DISSOLVED (MG/L AS N) | NITROGEN, ORGANIC TOTAL (MG/L AS N) | NITROGEN, ORGANIC DISSOLVED (MG/L AS N) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 22... | .8 | 8.4 | 317 | 308 | 3.3 | 3.4 | 2.400 | 2.500 | .90 | 1.1 |
| NOV 15... | 1.5 | 11 | 466 | 468 | 4.4 | 3.9 | 8.100 | 3.000 | .00 | .00 |
| DEC 11... | 1.4 | 6.0 | 500 | 486 | 3.6 | 2.7 | 2.900 | 2.300 | 6.3 | 6.4 |
| JAN 09... | 1.0 | 12 | 451 | 456 | 4.4 | 3.9 | 6.000 | 5.800 | 6.0 | 4.2 |
| FEB 12... | .4 | 5.3 | 211 | 218 | .84 | .56 | 1.200 | 1.000 | 1.6 | .80 |
| MAR 19... | .7 | 11 | 372 | 366 | 2.0 | .47 | 5.700 | 1.900 | 5.3 | 10 |
| APR 23... | 1.2 | 10 | 407 | 455 | 4.3 | 1.4 | 5.500 | 2.200 | 3.5 | 7.8 |
| MAY 13... | .8 | 9.0 | 359 | 365 | 3.5 | 3.2 | 1.500 | 1.600 | 1.3 | 1.4 |
| JUN 03... | 1.1 | 10 | 428 | 424 | 3.6 | 3.5 | 1.700 | 1.700 | 1.7 | .80 |
| JUL 15... | 1.6 | 12 | 500 | 491 | 5.0 | 4.3 | 1.200 | 1.100 | 1.2 | 1.5 |
| AUG 20... | 1.6 | 13 | 513 | 517 | 9.3 | 8.4 | -- | 1.900 | -- | -- |
| SEP 11... | 1.4 | 14 | 551 | 482 | 5.6 | 5.2 | 2.900 | 2.700 | 2.7 | 1.2 |

| DATE | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | PHOSPHORUS, DISSOLVED (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | CARBON, ORGANIC DISSOLVED (MG/L AS C) | CARBON, ORGANIC SUSPENDED (MG/L AS C) | SEDIMENT, SUSPENDED (MG/L) | SEDIMENT DISCHARGE, SUSPENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 22... | 3.3 | 3.6 | 1.800 | 1.600 | 12 | -- | -- | 51 | 74 | 98 |
| NOV 15... | 5.0 | 2.8 | 1.100 | .320 | 15 | -- | -- | 27 | 40 | 96 |
| DEC 11... | 9.2 | 8.7 | 5.900 | .300 | 14 | -- | -- | 41 | 54 | 45 |
| JAN 09... | 12 | 10 | 4.400 | 3.900 | -- | 11 | .3 | 25 | 38 | 97 |
| FEB 12... | 2.8 | 1.8 | .810 | .470 | 13 | -- | -- | 198 | 2340 | 90 |
| MAR 19... | 11 | 12 | 2.300 | 2.000 | -- | 13 | 2.3 | 191 | 507 | 94 |
| APR 23... | 9.0 | 10 | 2.600 | 2.100 | 20 | -- | -- | 89 | 196 | 98 |
| MAY 13... | 2.8 | 3.0 | 2.300 | 1.900 | 20 | -- | -- | 183 | 514 | 96 |
| JUN 03... | 3.4 | 2.5 | 4.500 | 3.200 | 14 | -- | -- | 54 | 110 | 87 |
| JUL 15... | 2.4 | 2.6 | 5.300 | 3.700 | -- | 12 | 1.5 | 71 | 94 | 98 |
| AUG 20... | -- | -- | 6.000 | 6.000 | -- | -- | -- | 65 | 87 | 97 |
| SEP 11... | 5.6 | 3.9 | 6.100 | 5.100 | -- | 9.2 | 1.3 | 47 | 85 | 97 |

| DATE | TIME | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUSPENDED TOTAL (UG/L AS AS) | ARSENIC DISSOLVED (UG/L AS AS) | BARIUM, TOTAL RECOVERABLE (UG/L AS BA) | BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) | BARIUM, DISSOLVED (UG/L AS BA) | CADMIUM TOTAL RECOVERABLE (UG/L AS CD) | CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) | CADMIUM DISSOLVED (UG/L AS CD) | CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC 11... | 0940 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN 09... | 1140 | 7 | 0 | 9 | 100 | 60 | 40 | 1 | 0 | 2 | 10 |
| FEB 12... | 1630 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 19... | 1500 | 9 | 0 | 11 | 200 | 200 | 50 | 2 | 1 | <1 | 20 |
| JUN 03... | 1415 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL 15... | 1320 | 8 | 0 | 8 | 0 | 0 | 30 | 1 | -- | <1 | 10 |
| AUG 20... | 1330 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 11... | 1145 | 8 | 0 | 8 | 100 | 80 | 20 | 1 | 0 | 2 | 10 |

## 08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) | CHROMIUM, DISSOLVED (UG/L AS CR) | COBALT, TOTAL RECOVERABLE (UG/L AS CO) | COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) | COBALT, DISSOLVED (UG/L AS CO) | COPPER, TOTAL RECOVERABLE (UG/L AS CU) | COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) | COPPER, DISSOLVED (UG/L AS CU) | IRON, TOTAL RECOVERABLE (UG/L AS FE) | IRON, SUSPENDED RECOVERABLE (UG/L AS FE) | IRON, DISSOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | | | | | | |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN | | | | | | | | | | | |
| 09... | 10 | 0 | 2 | 0 | <3 | 10 | 7 | 3 | 1200 | 1200 | 30 |
| FEB | | | | | | | | | | | |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR | | | | | | | | | | | |
| 19... | 20 | 0 | 4 | 1 | <3 | 10 | 7 | 3 | 4300 | 4300 | 30 |
| JUN | | | | | | | | | | | |
| 03... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL | | | | | | | | | | | |
| 15... | 10 | 0 | 0 | -- | <3 | 5 | 0 | 5 | 1100 | 1100 | 20 |
| AUG | | | | | | | | | | | |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP | | | | | | | | | | | |
| 11... | 10 | 0 | 1 | -- | <3 | 5 | 2 | 3 | 1100 | 1100 | 20 |

| DATE | LEAD, TOTAL RECOVERABLE (UG/L AS PB) | LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) | MANGANESE, SUSPENDED RECOV. (UG/L AS MN) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY TOTAL RECOVERABLE (UG/L AS HG) | MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) | MERCURY DISSOLVED (UG/L AS HG) | NICKEL, TOTAL RECOVERABLE (UG/L AS NI) | NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | | | | | | |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JAN | | | | | | | | | | | |
| 09... | 40 | 37 | 3 | 80 | 30 | 50 | .2 | .1 | .1 | 20 | 0 |
| FEB | | | | | | | | | | | |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR | | | | | | | | | | | |
| 19... | 11 | 11 | 0 | 170 | 160 | 7 | .2 | .2 | .0 | 23 | 16 |
| JUN | | | | | | | | | | | |
| 03... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL | | | | | | | | | | | |
| 15... | 24 | 24 | 0 | 90 | 80 | 7 | .2 | .1 | .1 | 18 | 0 |
| AUG | | | | | | | | | | | |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP | | | | | | | | | | | |
| 11... | 6 | 6 | 0 | 80 | 60 | 20 | .3 | .1 | .2 | 29 | 8 |

| DATE | NICKEL, DISSOLVED (UG/L AS NI) | SELENIUM, TOTAL (UG/L AS SE) | SELENIUM, SUSPENDED TOTAL (UG/L AS SE) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, TOTAL RECOVERABLE (UG/L AS AG) | SILVER, SUSPENDED RECOVERABLE (UG/L AS AG) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, TOTAL RECOVERABLE (UG/L AS ZN) | ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | | | | | |
| 11... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| JAN | | | | | | | | | | |
| 09... | 21 | 0 | 0 | 0 | 1 | 1 | 0 | 30 | 10 | 20 |
| FEB | | | | | | | | | | |
| 12... | -- | -- | -- | -- | 1 | -- | -- | -- | -- | -- |
| MAR | | | | | | | | | | |
| 19... | 7 | 0 | 0 | 0 | 1 | 1 | 0 | 40 | 30 | 8 |
| JUN | | | | | | | | | | |
| 03... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| JUL | | | | | | | | | | |
| 15... | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 40 |
| AUG | | | | | | | | | | |
| 20... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| SEP | | | | | | | | | | |
| 11... | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 10 | 30 |

| DATE | TIME | PCB, TOTAL (UG/L) | PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | CHLORDANE, TOTAL (UG/L) | CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV | | | | | | | | | | | |
| 15... | 0930 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

| DATE | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) | DIAZINON, TOTAL (UG/L) | DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) | DIELDRIN TOTAL (UG/L) | DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | ETHION, TOTAL (UG/L) | ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| NOV | | | | | | | | | | |
| 15... | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

## 08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | HEPTA-CHLOR, TOTAL (UG/L) | HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | HEPTA-CHLOR EPOXIDE TOTAL (UG/L) | HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | MALA-THION, TOTAL (UG/L) | MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | METH-OXY-CHLOR, TOTAL (UG/L) | METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| NOV<br>15... | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

| DATE | METHYL PARA-THION, TOTAL (UG/L) | METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG) | METHYL TRI-THION, TOTAL (UG/L) | METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG) | PARA-THION, TOTAL (UG/L) | PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | TOX-APHENE, TOTAL (UG/L) | TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) | TOTAL TRI-THION (UG/L) | TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| NOV<br>15... | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

| DATE | LENGTH OF EXPO-SURE (DAYS) | PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M | PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M | CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) | CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) | BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) |
|---|---|---|---|---|---|---|
| JUL<br>15... | 42 | 13.3 | 19.4 | 45.6 | 6.95 | 134 |

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE<br>TIME | DEC 11,79<br>0940 | MAR 19,80<br>1500 | MAY 13,80<br>1515 | JUN 3,80<br>1415 |
|---|---|---|---|---|
| TOTAL CELLS/ML | 6100 | 870 | 4300 | 32000 |
| DIVERSITY: DIVISION | 1.6 | 1.1 | 1.5 | 0.9 |
| .CLASS | 1.6 | 1.1 | 1.5 | 0.9 |
| ..ORDER | 2.2 | 1.7 | 2.2 | 1.4 |
| ...FAMILY | 2.4 | 2.3 | 2.6 | 2.5 |
| ....GENUS | 2.9 | 2.4 | 2.9 | 2.8 |

| ORGANISM | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT |
|---|---|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | | | |
| .CHLOROPHYCEAE | | | | | | | | |
| ..CHLOROCOCCALES | | | | | | | | |
| ...CHARACIACEAE | | | | | | | | |
| ....SCHROEDERIA | -- | - | -- | - | -- | - | * | 0 |
| ...COELASTRACEAE | | | | | | | | |
| ....COELASTRUM | -- | - | -- | - | -- | - | -- | - |
| ...MICRACTINIACEAE | | | | | | | | |
| ....GOLENKINIA | -- | - | -- | - | 150 | 4 | 170 | 1 |
| ....MICRACTINIUM | -- | - | -- | - | 51 | 1 | 7400# | 23 |
| ...OOCYSTACEAE | | | | | | | | |
| ....ANKISTRODESMUS | 270 | 4 | 17 | 2 | 26 | 1 | * | 0 |
| ....CHLORELLA | 950# | 16 | -- | - | * | 0 | 630 | 2 |
| ....DICTYOSPHAERIUM | 340 | 6 | -- | - | -- | - | -- | - |
| ....KIRCHNERIELLA | 100 | 2 | -- | - | -- | - | * | 0 |
| ....OOCYSTIS | -- | - | -- | - | 26 | 1 | 1500 | 5 |
| ....SELENASTRUM | -- | - | -- | - | 90 | 2 | -- | - |
| ....TETRAEDRON | -- | - | -- | - | -- | - | -- | - |
| ....TREUBARIA | -- | - | -- | - | * | 0 | * | 0 |
| ...SCENEDESMACEAE | | | | | | | | |
| ....ACTINASTRUM | -- | - | -- | - | 310 | 7 | 13000# | 40 |
| ....CRUCIGENIA | -- | - | -- | - | -- | - | -- | - |
| ....SCENEDESMUS | 68 | 1 | -- | - | 280 | 7 | 1300 | 4 |
| ....TETRASTRUM | -- | - | -- | - | 100 | 2 | -- | - |
| ..TETRASPORALES | | | | | | | | |
| ...PALMELLACEAE | | | | | | | | |
| ....SPHAEROCYSTIS | -- | - | -- | - | -- | - | 340 | 1 |
| ..VOLVOCALES | | | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | | | |
| ....CHLAMYDOMONAS | 170 | 3 | 11 | 1 | 51 | 1 | 170 | 1 |
| ...VOLVOCACEAE | | | | | | | | |
| ....EUDORINA | -- | - | -- | - | -- | - | 920 | 3 |
| ..ZYGNEMATALES | | | | | | | | |
| ...DESMIDIACEAE | | | | | | | | |
| ....CLOSTERIUM | -- | - | -- | - | -- | - | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## TRINITY RIVER BASIN

## 08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980--Continued

| DATE<br>TIME | DEC 11,79<br>0940 | | MAR 19,80<br>1500 | | MAY 13,80<br>1515 | | JUN 3,80<br>1415 | |
|---|---|---|---|---|---|---|---|---|
| ORGANISM | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT |
| CHRYSOPHYTA | | | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | | | |
| ..CENTRALES | | | | | | | | |
| ...COSCINODISCACEAE | | | | | | | | |
| ....CYCLOTELLA | 990# | 16 | 140# | 16 | 510 | 12 | 1700 | 5 |
| ....MELOSIRA | -- | - | 11 | 1 | 26 | 1 | * | 0 |
| ....THALASSIOSIRA | 34 | 1 | -- | - | -- | - | -- | - |
| ..PENNALES | | | | | | | | |
| ...CYMBELLACEAE | | | | | | | | |
| ....CYMBELLA | -- | - | 6 | 1 | -- | - | -- | - |
| ...EUNOTIACEAE | | | | | | | | |
| ....EUNOTIA | -- | - | 6 | 1 | -- | - | -- | - |
| ...FRAGILARIACEAE | | | | | | | | |
| ....SYNEDRA | 1500# | 24 | 11 | 1 | * | 0 | * | 0 |
| ...GOMPHONEMATACEAE | | | | | | | | |
| ....GOMPHONEMA | 34 | 1 | 6 | 1 | -- | - | -- | - |
| ...NAVICULACEAE | | | | | | | | |
| ....NAVICULA | -- | - | 63 | 7 | * | 0 | -- | - |
| ...NITZSCHIACEAE | | | | | | | | |
| ....NITZSCHIA | 200 | 3 | 290# | 33 | 64 | 1 | 800 | 2 |
| ...SURIRELLACEAE | | | | | | | | |
| ....SURIRELLA | -- | - | 17 | 2 | -- | - | -- | - |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | | | |
| .CRYPTOPHYCEAE | | | | | | | | |
| ..CRYPTOMONADALES | | | | | | | | |
| ...CRYPTOMONADACEAE | | | | | | | | |
| ....CRYPTOMONAS | -- | - | -- | - | -- | - | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | | | |
| .CYANOPHYCEAE | | | | | | | | |
| ..CHROOCOCCALES | | | | | | | | |
| ...CHROOCOCCACEAE | | | | | | | | |
| ....AGMENELLUM | -- | - | -- | - | -- | - | 460 | 1 |
| ....ANACYSTIS | -- | - | -- | - | 1200# | 28 | -- | - |
| ..HORMOGONALES | | | | | | | | |
| ...NOSTOCACEAE | | | | | | | | |
| ....ANABAENA | -- | - | -- | - | -- | - | 460 | 1 |
| ...OSCILLATORIACEAE | | | | | | | | |
| ....LYNGBYA | -- | - | -- | - | -- | - | -- | - |
| ....OSCILLATORIA | 1400# | 23 | 290# | 33 | 1300# | 30 | 2900 | 9 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | | | |
| .EUGLENOPHYCEAE | | | | | | | | |
| ..EUGLENALES | | | | | | | | |
| ...EUGLENACEAE | | | | | | | | |
| ....EUGLENA | 68 | 1 | -- | - | 64 | 1 | * | 0 |
| ....TRACHELOMONAS | -- | - | -- | - | 26 | 1 | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE | JUL 15,80 | AUG 20,80 | SEP 11,80 |
|---|---|---|---|
| TIME | 1320 | 1330 | 1145 |
| TOTAL CELLS/ML | 32000 | 14000 | 8200 |
| DIVERSITY: DIVISION | 0.7 | 1.4 | 1.6 |
| .CLASS | 0.7 | 1.4 | 1.6 |
| ..ORDER | 0.8 | 1.6 | 2.3 |
| ...FAMILY | 1.4 | 2.5 | 3.1 |
| ....GENUS | 2.0 | 3.3 | 3.7 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | -- | - | -- | - | -- | - |
| ...COELASTRACEAE | | | | | | |
| ....COELASTRUM | 800 | 2 | 2300# | 17 | -- | - |
| ...MICRACTINIACEAE | | | | | | |
| ....GOLENKINIA | * | 0 | 650 | 5 | * | 0 |
| ....MICRACTINIUM | 600 | 2 | -- | - | 600 | 7 |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | * | 0 | 650 | 5 | 100 | 1 |
| ....CHLORELLA | -- | - | -- | - | -- | - |
| ....DICTYOSPHAERIUM | 21000# | 66 | 440 | 3 | 130 | 2 |
| ....KIRCHNERIELLA | 600 | 2 | -- | - | 400 | 5 |
| ....OOCYSTIS | 1900 | 6 | 730 | 5 | 130 | 2 |
| ....SELENASTRUM | * | 0 | 800 | 6 | 170 | 2 |
| ....TETRAEDRON | * | 0 | -- | - | -- | - |
| ....TREUBARIA | -- | - | 73 | 1 | -- | - |
| ...SCENEDESMACEAE | | | | | | |
| ....ACTINASTRUM | -- | - | -- | - | 530 | 7 |
| ....CRUCIGENIA | 1400 | 4 | -- | - | 530 | 7 |
| ....SCENEDESMUS | 300 | 1 | 1300 | 9 | 800 | 10 |
| ....TETRASTRUM | -- | - | -- | - | -- | - |
| ..TETRASPORALES | | | | | | |
| ...PALMELLACEAE | | | | | | |
| ....SPHAEROCYSTIS | -- | - | -- | - | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | 350 | 1 | 290 | 2 | 170 | 2 |
| ...VOLVOCACEAE | | | | | | |
| ....EUDORINA | -- | - | -- | - | -- | - |
| ..ZYGNEMATALES | | | | | | |
| ...DESMIDIACEAE | | | | | | |
| ....CLOSTERIUM | -- | - | -- | - | 170 | 2 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 250 | 1 | 1000 | 7 | 900 | 11 |
| ....MELOSIRA | -- | - | -- | - | -- | - |
| ....THALASSIOSIRA | -- | - | -- | - | -- | - |
| ..PENNALES | | | | | | |
| ...CYMBELLACEAE | | | | | | |
| ....CYMBELLA | -- | - | -- | - | -- | - |
| ...EUNOTIACEAE | | | | | | |
| ....EUNOTIA | -- | - | -- | - | -- | - |
| ...FRAGILARIACEAE | | | | | | |
| ....SYNEDRA | -- | - | -- | - | * | 0 |
| ...GOMPHONEMATACEAE | | | | | | |
| ....GOMPHONEMA | -- | - | -- | - | * | 0 |
| ...NAVICULACEAE | | | | | | |
| ....NAVICULA | -- | - | -- | - | 200 | 2 |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | * | 0 | 360 | 3 | 1100 | 13 |
| ...SURIRELLACEAE | | | | | | |
| ....SURIRELLA | -- | - | -- | - | -- | - |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | -- | - | 73 | 1 | * | 0 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980--Continued

| DATE<br>TIME | JUL 15,80<br>1320 | | AUG 20,80<br>1330 | | SEP 11,80<br>1145 | |
|---|---|---|---|---|---|---|
| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | -- | - | 1500 | 11 | -- | - |
| ....ANACYSTIS | 200 | 1 | 3600# | 26 | 1400# | 18 |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENA | -- | - | -- | - | -- | - |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | 1900 | 6 | -- | - | -- | - |
| ....OSCILLATORIA | 2400 | 7 | -- | - | 600 | 7 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....EUGLENA | -- | - | -- | - | 67 | 1 |
| ....TRACHELOMONAS | -- | - | -- | - | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 18280 | 732 | 411 | 20300 | 59 | 2920 | 90 | 4450 | 160 |
| NOV. | 1979 | 19938 | 685 | 385 | 20700 | 54 | 2880 | 84 | 4530 | 160 |
| DEC. | 1979 | 29928 | 625 | 353 | 28500 | 47 | 3770 | 77 | 6200 | 160 |
| JAN. | 1980 | 96609 | 378 | 216 | 56400 | 22 | 5840 | 46 | 12000 | 120 |
| FEB. | 1980 | 56372 | 500 | 284 | 43200 | 34 | 5160 | 61 | 9300 | 140 |
| MAR. | 1980 | 30237 | 658 | 369 | 30200 | 53 | 4310 | 81 | 6620 | 150 |
| APR. | 1980 | 57356 | 478 | 272 | 42200 | 31 | 4830 | 58 | 9040 | 140 |
| MAY | 1980 | 91983 | 457 | 260 | 64700 | 29 | 7130 | 56 | 13800 | 140 |
| JUNE | 1980 | 22737 | 690 | 388 | 23800 | 54 | 3290 | 85 | 5210 | 160 |
| JULY | 1980 | 16315 | 821 | 458 | 20200 | 71 | 3120 | 100 | 4470 | 160 |
| AUG. | 1980 | 16295 | 812 | 454 | 20000 | 70 | 3070 | 100 | 4420 | 160 |
| SEPT | 1980 | 17964 | 793 | 444 | 21500 | 67 | 3250 | 98 | 4750 | 160 |
| TOTAL | | 474014 | ** | ** | 392000 | ** | 49600 | ** | 84800 | ** |
| WTD. AVG. | | 1295 | 541 | 306 | ** | 39 | ** | 66 | ** | 140 |

## 08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 710 | 788 | 782 | 576 | 500 | 823 | 637 | 578 | 682 | 733 | 836 | 772 |
| 2 | 764 | 560 | 750 | 632 | 640 | 806 | 568 | 643 | 713 | 769 | 784 | 814 |
| 3 | 768 | 474 | 748 | 682 | 655 | 780 | 582 | 689 | 725 | 847 | 816 | 839 |
| 4 | 736 | 450 | 756 | 712 | 586 | 772 | 617 | 630 | 730 | 872 | 745 | 824 |
| 5 | 780 | 474 | 772 | 730 | 693 | 802 | 663 | 503 | 733 | 867 | 805 | 817 |
| 6 | 792 | 496 | 804 | 646 | 747 | 815 | 764 | 491 | 749 | 830 | 822 | 832 |
| 7 | 774 | 556 | 792 | 666 | 779 | 861 | 809 | 523 | 721 | 795 | 836 | 806 |
| 8 | 754 | 602 | 808 | 686 | 500 | 842 | 657 | 610 | 733 | 827 | 849 | 769 |
| 9 | 792 | 674 | 788 | 720 | 311 | 830 | 611 | 478 | 739 | 838 | 841 | 746 |
| 10 | 830 | 700 | 790 | 752 | 300 | 825 | 660 | 536 | 746 | 837 | 816 | 788 |
| 11 | 825 | 708 | 818 | 780 | 388 | 847 | 721 | 673 | 741 | 846 | 800 | 817 |
| 12 | 814 | 792 | 856 | 776 | 379 | 838 | 714 | 590 | 740 | 809 | 767 | 792 |
| 13 | 818 | 786 | 798 | 784 | 538 | 861 | 312 | 570 | 736 | 780 | 813 | 800 |
| 14 | 806 | 760 | 806 | 786 | 612 | 864 | 359 | 375 | 713 | 794 | 827 | 739 |
| 15 | 778 | 738 | 820 | 812 | 529 | 851 | 411 | 254 | 719 | 808 | 838 | 803 |
| 16 | 792 | 760 | 528 | 830 | 645 | 862 | 367 | 399 | 722 | 820 | 829 | 866 |
| 17 | 824 | 736 | 610 | 824 | 639 | 762 | 375 | 361 | 726 | 815 | 825 | 792 |
| 18 | 808 | 720 | 584 | 836 | 694 | 323 | 488 | 362 | 737 | 824 | 812 | 718 |
| 19 | 724 | 732 | 544 | 820 | 710 | 658 | 515 | 384 | 742 | 847 | 805 | 760 |
| 20 | 574 | 768 | 602 | 788 | 716 | 795 | 604 | 422 | 723 | 829 | 827 | 775 |
| 21 | 488 | 770 | 626 | 628 | 712 | 810 | 679 | 498 | 739 | 807 | 813 | 793 |
| 22 | 526 | 772 | 560 | 252 | 713 | 839 | 717 | 534 | 700 | 821 | 811 | 796 |
| 23 | 558 | 796 | 616 | 298 | 723 | 883 | 744 | 571 | 672 | 819 | 805 | 792 |
| 24 | 628 | 784 | 598 | 294 | 695 | 836 | 735 | 608 | 566 | 829 | 798 | 805 |
| 25 | 700 | 768 | 600 | 320 | 718 | 821 | 297 | 638 | 499 | 820 | 787 | 810 |
| 26 | 736 | 786 | 484 | 356 | 756 | 805 | 400 | 676 | 591 | 843 | 793 | 812 |
| 27 | 726 | 792 | 420 | 338 | 720 | 801 | 500 | 686 | 566 | 811 | 798 | 808 |
| 28 | 658 | 762 | 442 | 478 | 783 | 241 | 590 | 703 | 568 | 807 | 811 | 775 |
| 29 | 738 | 774 | 444 | 518 | 807 | 309 | 612 | 680 | 629 | 818 | 819 | 811 |
| 30 | 786 | 754 | 484 | 550 | --- | 450 | 550 | 664 | 685 | 833 | 832 | 774 |
| 31 | 706 | --- | 502 | 382 | --- | 653 | --- | 679 | --- | 841 | 811 | --- |
| MEAN | 733 | 701 | 662 | 621 | 627 | 750 | 575 | 549 | 693 | 821 | 812 | 795 |

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 28.0 | 18.0 | 11.0 | 11.0 | 7.5 | 13.0 | 19.0 | 22.0 | 29.0 | 33.0 | 33.0 | 30.0 |
| 2 | 28.0 | 18.0 | 11.0 | 10.5 | 7.0 | 12.0 | 19.0 | 23.0 | 29.5 | 33.5 | --- | 31.0 |
| 3 | 28.0 | 18.0 | 9.0 | 11.0 | 7.0 | 12.0 | 18.0 | 24.0 | 30.0 | 33.0 | 32.0 | 31.0 |
| 4 | 25.0 | 16.0 | 9.0 | 9.5 | 8.0 | 14.5 | 19.0 | 24.5 | 29.5 | 33.0 | 30.5 | 31.0 |
| 5 | 25.0 | 16.0 | 9.0 | 9.5 | 10.0 | 14.0 | 19.5 | 23.0 | 29.5 | 33.0 | 30.5 | 31.0 |
| 6 | 23.0 | --- | 11.0 | 9.5 | 11.0 | 14.5 | 19.0 | 24.0 | 29.5 | 32.0 | 31.5 | 29.5 |
| 7 | 24.0 | 16.0 | 10.0 | 9.5 | 10.0 | 15.0 | 19.5 | 27.0 | 30.5 | 33.0 | 31.0 | 29.5 |
| 8 | 25.0 | 16.0 | 11.0 | 9.0 | 10.0 | 15.0 | 19.0 | 24.0 | 29.5 | 33.0 | 32.0 | 29.5 |
| 9 | 24.0 | 17.0 | 10.5 | 9.0 | 8.0 | 15.0 | 20.0 | 23.0 | 29.0 | 34.0 | 32.0 | 30.0 |
| 10 | 24.0 | 15.5 | 11.0 | 11.0 | 6.0 | 23.0 | 21.5 | 24.0 | 29.0 | 33.5 | 31.0 | 30.5 |
| 11 | 23.0 | 14.0 | 14.0 | 11.0 | 6.5 | 16.0 | 22.0 | 24.5 | 29.5 | 33.0 | 31.5 | 30.0 |
| 12 | 23.0 | 14.0 | 14.0 | 10.0 | 8.0 | 18.0 | 18.5 | 24.0 | 29.5 | 33.0 | 31.5 | 30.0 |
| 13 | 23.0 | 14.0 | 11.0 | 11.0 | 9.0 | 18.0 | 13.0 | 24.0 | 29.0 | 34.0 | 31.5 | 30.0 |
| 14 | 22.0 | 14.0 | 11.0 | 10.0 | 10.5 | 18.0 | 14.0 | 22.5 | 27.0 | 33.0 | 31.5 | 29.5 |
| 15 | 22.0 | 13.5 | 12.0 | 12.5 | 10.0 | 16.5 | 13.0 | 22.0 | 30.5 | 33.0 | 31.0 | 30.0 |
| 16 | 23.0 | 14.0 | 9.5 | 12.5 | 9.5 | 18.0 | 16.5 | 22.5 | 30.5 | 33.5 | 31.0 | 30.0 |
| 17 | 24.0 | 14.5 | 8.0 | 12.5 | 8.0 | 18.0 | 17.5 | 22.5 | 29.5 | 33.0 | 31.0 | 30.0 |
| 18 | 24.0 | 15.0 | 7.0 | 14.5 | 11.0 | 15.0 | 18.0 | 24.0 | 31.0 | 33.0 | 31.0 | 30.5 |
| 19 | 24.0 | 17.0 | 7.0 | 14.5 | 13.0 | 18.0 | 19.0 | 24.5 | 31.0 | 33.0 | 31.0 | 30.0 |
| 20 | 24.0 | 19.0 | 9.0 | 14.0 | 15.0 | 19.0 | 21.0 | 29.0 | 29.0 | 33.0 | 31.0 | 29.0 |
| 21 | 24.5 | 18.0 | 11.0 | 14.0 | 14.0 | 19.0 | 22.0 | 25.5 | 31.0 | 33.0 | 32.0 | 29.5 |
| 22 | 22.0 | 14.0 | 14.0 | 10.5 | 16.0 | 18.0 | 23.0 | 26.0 | 30.0 | 33.0 | 32.0 | 30.0 |
| 23 | 21.0 | 13.0 | 14.0 | 11.0 | 14.5 | 18.0 | 23.0 | 26.0 | 31.0 | 33.0 | 31.0 | 29.0 |
| 24 | 22.0 | 15.0 | 15.5 | 10.5 | 15.5 | 18.0 | 24.0 | 27.0 | 31.0 | 33.0 | 31.0 | 30.0 |
| 25 | 21.0 | 13.0 | 14.5 | 10.0 | 15.0 | 16.5 | 22.0 | 27.0 | 33.0 | 33.0 | 31.5 | 27.0 |
| 26 | 21.0 | 13.0 | 14.0 | 10.5 | 14.5 | 16.5 | 21.0 | 29.0 | 32.0 | 33.0 | 31.5 | 24.0 |
| 27 | 22.0 | 13.0 | 12.0 | 9.5 | --- | 16.0 | 20.5 | 29.0 | 33.0 | --- | 31.5 | 24.0 |
| 28 | 20.5 | 13.0 | 13.0 | 8.5 | 16.0 | 18.0 | 20.0 | 29.5 | 32.0 | --- | 29.5 | 24.0 |
| 29 | 21.0 | 11.0 | 12.0 | 8.0 | 16.0 | 15.0 | 20.5 | 29.5 | 31.0 | --- | 30.5 | --- |
| 30 | 20.0 | 11.0 | 12.0 | 8.0 | --- | 19.0 | 21.0 | 31.0 | 33.0 | --- | 29.5 | --- |
| 31 | 18.0 | --- | 11.0 | 7.5 | --- | 18.0 | --- | 30.0 | --- | --- | 30.0 | --- |
| MEAN | 23.0 | 15.0 | 11.0 | 10.5 | 11.0 | 16.5 | 19.5 | 25.5 | 30.5 | 33.0 | 31.0 | 29.5 |

## 08062800 CEDAR CREEK NEAR KEMP, TX

**LOCATION (revised).**--Lat 32°30'18", long 96°06'57", Kaufman County, Hydrologic Unit 12030107, on left bank at downstream side of bridge on Farm Road 1836, 3.6 mi (5.8 km) upstream from Williams Creek, 8.1 mi (13.0 km) northeast of Kemp, and 51.5 mi (82.9 km) upstream from mouth.

**DRAINAGE AREA.**--189 mi$^2$ (490 km$^2$).

**PERIOD OF RECORD.**--January 1963 to current year.

**GAGE.**--Water-stage recorder and crest-stage gages. Datum of gage is 341.48 ft (104.083 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Records good except those below 10 ft$^3$/s (0.28 m$^3$/s), which are fair. Flow is affected at times by storage in Terrell Municipal Lake, capacity 8,300 acre-ft (10.2 hm$^3$). Records furnished by the city of Terrell show that during the current year 3,470 acre-ft (4.28 hm$^3$) was diverted from Terrell Municipal Lake for municipal use and 1,770 acre-ft (2.18 hm$^3$) of sewage effluent was returned to a tributary of Kings Creek that enters downstream from this station. Flow is affected at times by discharge from the flood-detention pools of 19 floodwater-retarding structures with a combined detention capacity of 18,660 acre-ft (23.0 hm$^3$). These structures control runoff from 55.2 mi$^2$ (143.0 km$^2$). Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--17 years (water years 1964-80), 116 ft$^3$/s (3.285 m$^3$/s), 84,040 acre-ft/yr (104 hm$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 29,000 ft$^3$/s (821 m$^3$/s) Apr. 26, 1966, gage height, 16.8 ft (5.12 m); no flow at times each year.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since at least 1889, about 20.5 ft (6.25 m) in 1945, from information by State Department of Highways and Public Transportation and local residents.

**EXTREMES FOR CURRENT YEAR.**--Peak discharges above base of 2,000 ft$^3$/s (56.6 m$^3$/s) and maximum (*):

| Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| Jan. 23 | 0100 | *5,580 | 158 | 13.53 | 4.124 |
| Apr. 14 | 2100 | 2,400 | 68.0 | 12.85 | 3.917 |
| May 17 | 0600 | 3,780 | 107 | 13.22 | 4.029 |

Minimum discharge, no flow July 5 to Sept. 28.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .49 | 1.4 | 1.7 | 12 | 68 | 5.7 | 29 | 7.0 | 4.4 | .30 | .00 | .00 |
| 2 | .42 | 1.3 | 1.7 | 9.3 | 47 | 5.1 | 19 | 8.6 | 3.4 | .22 | .00 | .00 |
| 3 | .33 | 1.3 | 1.6 | 8.8 | 36 | 5.0 | 13 | 160 | 2.4 | .12 | .00 | .00 |
| 4 | .30 | 1.3 | 1.5 | 8.1 | 28 | 5.4 | 9.4 | 60 | 1.6 | .04 | .00 | .00 |
| 5 | .25 | 1.2 | 1.5 | 7.6 | 23 | 5.6 | 6.6 | 24 | 1.3 | .00 | .00 | .00 |
| 6 | .23 | 1.2 | 1.5 | 7.2 | 19 | 4.8 | 5.1 | 16 | .94 | .00 | .00 | .00 |
| 7 | .19 | 1.2 | 1.4 | 6.3 | 16 | 4.4 | 4.8 | 111 | .71 | .00 | .00 | .00 |
| 8 | .18 | 1.2 | 1.4 | 5.5 | 126 | 3.9 | 4.2 | 288 | .50 | .00 | .00 | .00 |
| 9 | .14 | 1.6 | 1.3 | 4.4 | 1230 | 3.8 | 3.4 | 113 | .44 | .00 | .00 | .00 |
| 10 | .11 | 1.8 | 1.3 | 3.4 | 1690 | 3.5 | 3.2 | 56 | .40 | .00 | .00 | .00 |
| 11 | .09 | 1.8 | 1.3 | 2.6 | 749 | 3.5 | 2.7 | 33 | .35 | .00 | .00 | .00 |
| 12 | .09 | 1.8 | 1.4 | 2.0 | 207 | 12 | 2.6 | 25 | .35 | .00 | .00 | .00 |
| 13 | .08 | 1.7 | 1.8 | 1.6 | 121 | 40 | 322 | 226 | .32 | .00 | .00 | .00 |
| 14 | .06 | 1.7 | 16 | 1.4 | 78 | 14 | 1750 | 477 | .30 | .00 | .00 | .00 |
| 15 | .04 | 1.7 | 16 | 1.3 | 59 | 6.7 | 1730 | 197 | .27 | .00 | .00 | .00 |
| 16 | .03 | 1.7 | 7.4 | 1.2 | 47 | 85 | 414 | 1150 | .25 | .00 | .00 | .00 |
| 17 | .05 | 1.7 | 5.0 | 1.2 | 40 | 391 | 141 | 3170 | .25 | .00 | .00 | .00 |
| 18 | .05 | 1.6 | 4.8 | 1.3 | 36 | 265 | 69 | 1390 | .22 | .00 | .00 | .00 |
| 19 | .06 | 1.6 | 4.5 | 1.4 | 34 | 39 | 43 | 225 | .20 | .00 | .00 | .00 |
| 20 | .03 | 1.6 | 4.5 | 570 | 30 | 20 | 32 | 113 | 1.2 | .00 | .00 | .00 |
| 21 | .01 | 2.6 | 4.9 | 1380 | 24 | 12 | 27 | 72 | .64 | .00 | .00 | .00 |
| 22 | .12 | 2.4 | 123 | 3040 | 21 | 8.0 | 21 | 48 | .30 | .00 | .00 | .00 |
| 23 | .16 | 2.3 | 682 | 4160 | 17 | 6.3 | 15 | 38 | 2.7 | .00 | .00 | .00 |
| 24 | .16 | 2.3 | 1220 | 2120 | 14 | 5.7 | 12 | 31 | 2.8 | .00 | .00 | .00 |
| 25 | .12 | 2.2 | 1390 | 1080 | 12 | 5.1 | 12 | 24 | 2.2 | .00 | .00 | .00 |
| 26 | .12 | 2.1 | 492 | 306 | 9.9 | 4.7 | 22 | 19 | 1.8 | .00 | .00 | .00 |
| 27 | .09 | 2.1 | 142 | 166 | 8.5 | 8.0 | 63 | 15 | 1.1 | .00 | .00 | .00 |
| 28 | .06 | 2.0 | 66 | 96 | 7.8 | 289 | 29 | 12 | .79 | .00 | .00 | .00 |
| 29 | .06 | 1.8 | 29 | 65 | 6.7 | 423 | 15 | 9.8 | .60 | .00 | .00 | .10 |
| 30 | 1.1 | 1.7 | 21 | 91 | --- | 124 | 9.6 | 7.8 | .45 | .00 | .00 | 106 |
| 31 | 1.6 | --- | 15 | 101 | --- | 53 | --- | 5.9 | --- | .00 | .00 | --- |
| TOTAL | 6.82 | 51.9 | 4262.5 | 13261.6 | 4804.9 | 1862.2 | 4829.6 | 8132.1 | 33.18 | .68 | .00 | 106.10 |
| MEAN | .22 | 1.73 | 138 | 428 | 166 | 60.1 | 161 | 262 | 1.11 | .022 | .000 | 3.54 |
| MAX | 1.6 | 2.6 | 1390 | 4160 | 1690 | 423 | 1750 | 3170 | 4.4 | .30 | .00 | 106 |
| MIN | .01 | 1.2 | 1.3 | 1.2 | 6.7 | 3.5 | 2.6 | 5.9 | .20 | .00 | .00 | .00 |
| AC-FT | 14 | 103 | 8450 | 26300 | 9530 | 3690 | 9580 | 16130 | 66 | 1.3 | .00 | 210 |

CAL YR 1979 TOTAL 40737.78 MEAN 112 MAX 4190 MIN .00 AC-FT 80800
WTR YR 1980 TOTAL 37351.58 MEAN 102 MAX 4160 MIN .00 AC-FT 74090

## 08062900 KINGS CREEK NEAR KAUFMAN, TX

**LOCATION.**--Lat 32°30'48", long 96°19'44", Kaufman County, Hydrologic Unit 12030107, on left bank at downstream side of bridge on Farm Road 1388, 3.6 mi (5.8 km) upstream from Big Cottonwood Creek, 4.8 mi (7.7 km) downstream from Big Brushy Creek, and 5.3 mi (8.5 km) south of Kaufman.

**DRAINAGE AREA.**--233 mi² (603 km²).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--January 1963 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 343.24 ft (104.620 m) State Department of Highways and Public Transportation datum.

**REMARKS.**--Water-discharge records good. During the year, the city of Terrell diverted 3,470 acre-ft (4.28 hm³) from Terrell Municipal Lake in the Cedar Creek basin and returned 1,770 acre-ft (2.18 hm³) of sewage effluent into the creek above this station. The city of Kaufman diverted 833 acre-ft (1.03 hm³) from Lavon Lake (on East Fork Trinity River) during year and returned 297 acre-ft (0.366 hm³) of sewage effluent into Kings Creek above this station. Flow is affected at times by discharge from flood-detention pools of 28 floodwater-retarding structures with combined detention capacity of 14,560 acre-ft (18.0 hm³). These structures control runoff from 46.8 mi² (121.2 km²) in the Cedar Creek drainage basins. Tarrant County Water Control and Improvement District No. 1 gage-height telemeter located at station.

**AVERAGE DISCHARGE.**--17 years (water years 1964-80), 157 ft³/s (4.446 m³/s), 113,700 acre-ft/yr (140 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 56,200 ft³/s (1,590 m³/s) Apr. 19, 1976, gage height, 26.19 ft (7.983 m), from rating curve extended above 30,000 ft³/s (1,420 m³/s); no flow at times most years. Maximum stage since at least 1942, that of Apr. 19, 1976.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood in 1949 reached a stage of 23.1 ft (7.04 m), from information by State Department of Highways and Public Transportation.

**EXTREMES FOR CURRENT YEAR.**--Peak discharges above base of 3,000 ft³/s (85.0 m³/s) and maximum (*):

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| Jan. 23 | 0500 | *5,130 | 145 | 19.34 | 5.895 |
| May 16 | 2245 | 4,040 | 114 | 18.54 | 5.651 |

Minimum discharge, 0.30 ft³/s (0.008 m³/s) July 23-25.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.5 | 26 | 2.2 | 20 | 32 | 5.1 | 6.4 | 5.6 | .95 | 1.5 | .73 | 1.3 |
| 2 | 2.4 | 13 | 2.4 | 10 | 19 | 5.0 | 5.4 | 233 | .86 | 1.6 | .53 | 1.4 |
| 3 | 2.0 | 7.6 | 2.8 | 8.0 | 12 | 5.5 | 4.7 | 251 | 1.1 | 1.6 | .49 | 1.3 |
| 4 | 1.8 | 5.6 | 3.2 | 6.0 | 7.8 | 6.0 | 3.9 | 58 | .75 | 1.5 | .46 | 1.5 |
| 5 | 1.7 | 4.4 | 3.4 | 4.5 | 5.4 | 6.5 | 3.9 | 21 | .90 | 1.5 | .44 | 1.5 |
| 6 | 1.6 | 3.1 | 3.9 | 3.5 | 4.1 | 6.3 | 4.0 | 23 | 1.1 | 1.5 | .44 | 1.5 |
| 7 | 1.5 | 2.3 | 4.2 | 3.0 | 3.0 | 6.1 | 3.8 | 861 | 1.2 | 1.5 | .49 | 1.6 |
| 8 | 1.6 | 2.1 | 4.2 | 2.7 | 28 | 5.8 | 3.5 | 226 | 1.2 | 1.4 | .62 | 1.5 |
| 9 | 1.8 | 7.9 | 4.2 | 2.5 | 149 | 5.6 | 3.3 | 64 | .84 | 1.3 | .60 | 1.1 |
| 10 | 1.9 | 13 | 4.0 | 2.3 | 83 | 5.5 | 2.8 | 28 | .83 | 1.3 | .66 | 1.3 |
| 11 | 1.5 | 9.5 | 4.2 | 2.1 | 88 | 5.3 | 3.1 | 11 | 1.2 | 1.1 | .61 | 1.3 |
| 12 | 1.1 | 6.4 | 6.1 | 2.0 | 133 | 4.9 | 3.1 | 441 | 1.3 | .85 | .71 | 1.4 |
| 13 | 1.0 | 4.5 | 19 | 1.9 | 75 | 5.1 | 331 | 980 | 1.1 | .99 | .70 | 1.3 |
| 14 | 1.8 | 2.5 | 23 | 1.8 | 40 | 7.1 | 1250 | 197 | 1.0 | .78 | .77 | 1.2 |
| 15 | 1.4 | 1.2 | 8.7 | 1.7 | 30 | 5.6 | 425 | 496 | 1.0 | .49 | .83 | 1.1 |
| 16 | 1.5 | 1.4 | 6.1 | 1.7 | 20 | 5.1 | 111 | 2910 | 1.0 | .60 | .85 | 1.2 |
| 17 | 1.3 | .99 | 5.2 | 1.6 | 15 | 5.1 | 59 | 2720 | .99 | 1.1 | .96 | 1.1 |
| 18 | 1.6 | 2.4 | 4.0 | 1.5 | 10 | 4.5 | 33 | 374 | 1.1 | 1.1 | 1.1 | .99 |
| 19 | 1.5 | 3.5 | 3.6 | 1.5 | 8.0 | 4.3 | 30 | 134 | 1.2 | .72 | 1.2 | .99 |
| 20 | 1.5 | 3.1 | 3.6 | 50 | 7.0 | 9.3 | 21 | 79 | 2.9 | .60 | 1.1 | 1.4 |
| 21 | 1.5 | 4.2 | 4.1 | 1200 | 6.5 | 18 | 12 | 46 | 179 | .49 | 1.1 | 1.2 |
| 22 | 2.5 | 6.3 | 329 | 2510 | 6.0 | 18 | 8.2 | 26 | 54 | .39 | 1.1 | 1.1 |
| 23 | 5.4 | 7.6 | 699 | 4440 | 5.8 | 17 | 6.0 | 15 | 284 | .33 | 1.2 | 1.1 |
| 24 | 10 | 4.7 | 2060 | 1400 | 5.7 | 16 | 4.7 | 8.6 | 129 | .30 | 1.4 | 1.2 |
| 25 | 6.1 | 4.4 | 1400 | 348 | 5.6 | 14 | 28 | 5.3 | 44 | .32 | 1.2 | 1.1 |
| 26 | 3.6 | 4.4 | 330 | 172 | 5.5 | 11 | 146 | 3.5 | 17 | .45 | 1.1 | .78 |
| 27 | 6.6 | 4.0 | 160 | 106 | 5.4 | 8.1 | 94 | 2.4 | 5.6 | .50 | 1.1 | .66 |
| 28 | 11 | 3.2 | 100 | 66 | 5.3 | 9.9 | 32 | 1.8 | 4.8 | .68 | 1.2 | .85 |
| 29 | 8.5 | 2.3 | 65 | 45 | 5.2 | 18 | 12 | 1.5 | 3.6 | .53 | 1.2 | 56 |
| 30 | 6.3 | 1.9 | 45 | 52 | --- | 12 | 8.1 | 1.4 | 2.8 | .85 | .92 | 960 |
| 31 | 16 | --- | 30 | 47 | --- | 7.8 | --- | 1.4 | --- | .87 | 1.1 | --- |
| TOTAL | 110.5 | 163.49 | 5340.1 | 10514.3 | 820.3 | 263.5 | 2658.9 | 10225.5 | 746.32 | 28.74 | 26.91 | 1049.97 |
| MEAN | 3.56 | 5.45 | 172 | 339 | 28.3 | 8.50 | 88.6 | 330 | 24.9 | .93 | .87 | 35.0 |
| MAX | 16 | 26 | 2060 | 4440 | 149 | 18 | 1250 | 2910 | 284 | 1.6 | 1.4 | 960 |
| MIN | 1.0 | .99 | 2.2 | 1.5 | 3.0 | 4.3 | 2.8 | 1.4 | .75 | .30 | .44 | .66 |
| AC-FT | 219 | 324 | 10590 | 20860 | 1630 | 523 | 5270 | 20280 | 1480 | 57 | 53 | 2080 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CAL YR 1979 | TOTAL | 73711.37 | MEAN 202 | MAX 9550 | MIN .36 | AC-FT 146200 |
| WTR YR 1980 | TOTAL | 31948.53 | MEAN 87.3 | MAX 4440 | MIN .30 | AC-FT 63370 |

## 08062900 KINGS CREEK NEAR KAUFMAN, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Sediment records: October 1976 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | TEMPER-ATURE, WATER (DEG C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. FALL DIAM. % FINER THAN .002 MM | SED. SUSP. FALL DIAM. % FINER THAN .004 MM |
|---|---|---|---|---|---|---|---|
| NOV | | | | | | | |
| 14... | 1335 | 2.6 | 12.0 | 39 | .28 | -- | -- |
| DEC | | | | | | | |
| 18... | 1315 | 3.9 | 5.0 | 67 | .72 | -- | -- |
| JAN | | | | | | | |
| 22... | 1730 | 3780 | 10.5 | 539 | 5500 | 68 | 70 |
| MAR | | | | | | | |
| 13... | 0930 | 4.5 | 15.0 | 13 | .16 | -- | -- |
| APR | | | | | | | |
| 15... | 1440 | 313 | 13.0 | 714 | 603 | -- | -- |
| MAY | | | | | | | |
| 20... | 1542 | 715 | 23.5 | 348 | 672 | -- | -- |
| JUL | | | | | | | |
| 01... | 1235 | 1.4 | 33.0 | 40 | .16 | -- | -- |

| DATE | SED. SUSP. FALL DIAM. % FINER THAN .008 MM | SED. SUSP. FALL DIAM. % FINER THAN .016 MM | SED. SUSP. FALL DIAM. % FINER THAN .031 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM |
|---|---|---|---|---|---|---|---|
| NOV | | | | | | | |
| 14... | -- | -- | -- | -- | -- | -- | -- |
| DEC | | | | | | | |
| 18... | -- | -- | -- | -- | -- | -- | -- |
| JAN | | | | | | | |
| 22... | 72 | 72 | 79 | 80 | 87 | 97 | 100 |
| MAR | | | | | | | |
| 13... | -- | -- | -- | -- | -- | -- | -- |
| APR | | | | | | | |
| 15... | -- | -- | -- | 63 | -- | -- | -- |
| MAY | | | | | | | |
| 20... | -- | -- | -- | -- | -- | -- | -- |
| JUL | | | | | | | |
| 01... | -- | -- | -- | -- | -- | -- | -- |

## 08063010 CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX

LOCATION.--Lat 32°14'35", long 96°08'26", Henderson County, Hydrologic Unit 12030107, inside pumphouse on lower level, 1,000 ft (300 m) north of spillway, 5.5 mi (8.8 km) upstream from Joe B. Hogsett Dam on Cedar Creek, and 8.0 mi (12.9 km) northwest of Trinidad.

DRAINAGE AREA.--1,007 mi² (2,608 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 15, 1972, at unfinished pumphouse at same site and datum. May 16, 1972, to Sept. 8, 1975, at site 0.25 mi (0.40 km) north and upstream from pumphouse at same datum.

REMARKS.--The reservoir is formed by a rolled earthfill dam 17,539 ft (5,346 m) long. The spillway is located on the right bank 5.5 mi (8.8 km) upstream from the dam and discharges into the Trinity River through a cut channel 2 mi (3 km) long. Deliberate impoundment began July 2, 1965, and the dam was completed in February 1966. The spillway is 474 ft (144 m) long and has eight 40- by 24-foot (12 by 7 m) radial gates and two automatically operated 40- by 8.5-ft (12 by 2.6 m) hinged gates. Low-flow releases may be made downstream through a 5.0-foot-diameter (1.5 m) conduit through the dam. The dam is the property of Tarrant County Water Control and Improvement District No. 1 and was built for municipal and industrial supply and for recreational purposes. The area and capacity tables were based on a survey during the period 1940-58. During the current year, records furnished by Tarrant County Water Control and Improvement District No. 1 show that a total of 88,450 acre-ft (109 hm³) was diverted from the reservoir for municipal and industrial uses by lakeside developments and by the cities of Arlington, Fort Worth, Mansfield, Kemp, Trinidad, and Mabank. Flow is affected at times by discharge from the flood-detention pools of 80 floodwater-retarding structures with a combined detention capacity of 54,080 acre-ft (66.7 hm³). These structures control runoff from 171 mi² (443 km²). Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 340.0 | - |
| Top of radial gates | 325.0 | 785,100 |
| Top of automatic gates | 322.5 | 696,400 |
| Top of conservation pool | 322.0 | 679,200 |
| Crest of spillway (automatic gates) | 314.0 | 441,000 |
| Crest of spillway (radial gates) | 302.0 | 197,800 |
| Lowest gated outlet (invert) | 263.5 | 430 |

COOPERATION.--Records of diversions furnished by the Tarrant County Water Control and Improvement District No. 1. The area and capacity tables were furnished by Freese and Nichols, Consulting Engineers, for Tarrant County Water Control and Improvement District No. 1.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 722,000 acre-ft (890 hm³) June 4, 1973, elevation, 323.24 ft (98.524 m); minimum since first appreciable storage in 1966, 332,900 acre-ft (410 hm³) Mar. 19, 1967, elevation, 309.42 ft (94.311 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 687,100 acre-ft (847 hm³) Mar. 20 at 1900 hours, elevation, 322.23 ft (98.216 m); minimum, 562,300 acre-ft (693 hm³) Sept. 29, elevation, 318.33 ft (97.027 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 318.0 | 552,300 | 322.0 | 679,200 |
| 320.0 | 613,800 | 324.0 | 748,800 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 654700 | 645100 | 633500 | 662600 | 677600 | 678900 | 679200 | 676200 | 672600 | 658300 | 623200 | 586700 |
| 2 | 654300 | 644400 | 632500 | 663600 | 677200 | 674600 | 679200 | 678200 | 672600 | 657300 | 620600 | 586700 |
| 3 | 653300 | 643500 | 631500 | 663600 | 677900 | 672900 | 680300 | 678200 | 671600 | 655300 | 619000 | 586100 |
| 4 | 652700 | 642200 | 631500 | 663300 | 678200 | 677900 | 679200 | 677900 | 671300 | 654300 | 618300 | 585100 |
| 5 | 651300 | 642800 | 631500 | 662000 | 677900 | 673900 | 678200 | 677600 | 669600 | 653300 | 617100 | 584800 |
| 6 | 651300 | 641800 | 630900 | 665000 | 678200 | 673300 | 678200 | 676900 | 668900 | 652700 | 616400 | 582900 |
| 7 | 650000 | 639900 | 630900 | 663000 | 677200 | 673300 | 678200 | 677600 | 668900 | 651300 | 616100 | 582000 |
| 8 | 649400 | 640200 | 630300 | 662000 | 677200 | 673300 | 677200 | 679200 | 668600 | 650300 | 614800 | 582000 |
| 9 | 649700 | 642500 | 629600 | 660600 | 676900 | 673300 | 676600 | 678600 | 667900 | 649400 | 613500 | 580800 |
| 10 | 647000 | 640600 | 629000 | 661300 | 678900 | 673300 | 674900 | 678200 | 666900 | 648000 | 612600 | 580200 |
| 11 | 646400 | 639900 | 632800 | 663000 | 680600 | 673300 | 677200 | 677200 | 666000 | 647000 | 611300 | 579000 |
| 12 | 646000 | 639900 | 633500 | 660600 | 679600 | 672900 | 678600 | 680600 | 664600 | 645400 | 610700 | 577500 |
| 13 | 645700 | 638900 | 632200 | 661300 | 679900 | 672900 | 679200 | 679600 | 663000 | 644100 | 609500 | 576600 |
| 14 | 644400 | 638900 | 631200 | 660600 | 680300 | 672300 | 681300 | 680600 | 662000 | 642800 | 607000 | 576000 |
| 15 | 644400 | 638300 | 630600 | 661000 | 683000 | 671300 | 681300 | 684000 | 661000 | 641800 | 606300 | 575400 |
| 16 | 645100 | 637700 | 631500 | 661300 | 680300 | 677900 | 679200 | 680300 | 660000 | 640600 | 604500 | 572900 |
| 17 | 645100 | 637300 | 629300 | 661600 | 678200 | 681300 | 678900 | 680900 | 659600 | 639900 | 603500 | 573200 |
| 18 | 643800 | 637700 | 628300 | 661000 | 677200 | 680300 | 679200 | 679600 | 660000 | 638300 | 603200 | 569900 |
| 19 | 642800 | 638000 | 628600 | 663000 | 678200 | 680300 | 679200 | 679200 | 659000 | 637300 | 601700 | 571400 |
| 20 | 643100 | 638000 | 628600 | 669300 | 677900 | 679600 | 678600 | 679200 | 667300 | 635400 | 600700 | 569000 |
| 21 | 643100 | 641200 | 631900 | 675900 | 678600 | 680300 | 678200 | 679200 | 665300 | 637300 | 600400 | 567800 |
| 22 | 644700 | 638900 | 636700 | 677900 | 678200 | 678900 | 677600 | 678900 | 665000 | 633800 | 599500 | 568100 |
| 23 | 643500 | 637300 | 645400 | 680600 | 678900 | 680600 | 676600 | 677600 | 664300 | 632800 | 598500 | 568100 |
| 24 | 643500 | 637300 | 652700 | 679200 | 679600 | 679600 | 677900 | 677200 | 663300 | 631500 | 597300 | 567500 |
| 25 | 642800 | 637000 | 658300 | 678600 | 678600 | 678900 | 678900 | 677600 | 663300 | 629300 | 596000 | 566600 |
| 26 | 640900 | 636000 | 661300 | 680900 | 677200 | 678900 | 677900 | 677200 | 662600 | 627700 | 594800 | 565400 |
| 27 | 641200 | 636400 | 662300 | 678900 | 676900 | 681300 | 677200 | 677200 | 662000 | 627000 | 593600 | 564100 |
| 28 | 641500 | 635400 | 663300 | 679600 | 676600 | 680600 | 676900 | 676200 | 660300 | 627400 | 592600 | 563800 |
| 29 | 638900 | 635100 | 664000 | 679600 | 680600 | 678900 | 676200 | 674300 | 659300 | 626700 | 591100 | 566600 |
| 30 | 647400 | 633500 | 664300 | 681600 | --- | 679900 | 675600 | 674900 | 658300 | 625400 | 589500 | 566300 |
| 31 | 645700 | --- | 663300 | 678900 | --- | 678200 | --- | 674300 | --- | 624100 | 587900 | --- |
| MAX | 654700 | 645100 | 664300 | 681600 | 683000 | 681300 | 681300 | 684000 | 672600 | 658300 | 623200 | 586700 |
| MIN | 638900 | 633500 | 628300 | 660600 | 676600 | 671300 | 674900 | 674300 | 658300 | 624100 | 587900 | 563800 |
| (†) | 320.99 | 320.61 | 321.52 | 321.99 | 322.04 | 321.97 | 321.89 | 321.85 | 321.37 | 320.32 | 319.17 | 318.46 |
| (‡) | -9300 | -12200 | +29800 | +15600 | +1700 | -2400 | -2600 | -1300 | -16000 | -34200 | -36200 | -21600 |
| (††) | 4120 | 3050 | 2990 | 2950 | 2800 | 3350 | 4690 | 6770 | 13800 | 16380 | 16310 | 11240 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CAL YR 1979 | MAX | 688500 | MIN | 609500 | ‡ | +59800 | †† | 48350 |
| WTR YR 1980 | MAX | 684000 | MIN | 563800 | ‡ | -88700 | †† | 88450 |

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal and industrial uses by private lakeside companies, nearby cities, and cities of Arlington, Fort Worth, and Mansfield.

## 08063010 CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1969 to current year.

### 321111096042901 CEDAR CREEK RESERVOIR SITE AR

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMP-LING DEPTH (FT) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 24... | 1630 | 1.0 | 218 | 7.7 | 10.5 | 10.4 | 95 |
| 24... | 1632 | 10.0 | 218 | 7.7 | 10.5 | 10.4 | 95 |
| 24... | 1634 | 24.0 | 218 | 7.7 | 10.5 | 10.3 | 94 |
| MAY | | | | | | | |
| 07... | 1410 | 1.0 | 211 | 7.8 | 21.5 | 8.4 | 95 |
| 07... | 1412 | 10.0 | 211 | 7.6 | 20.0 | 8.0 | 89 |
| 07... | 1414 | 20.0 | 211 | 7.4 | 19.0 | 7.4 | 80 |
| 07... | 1416 | 30.0 | 213 | 7.0 | 17.5 | 5.6 | 59 |
| 07... | 1418 | 40.0 | 213 | 6.9 | 16.5 | 4.5 | 46 |
| 07... | 1420 | 50.0 | 215 | 6.9 | 16.5 | 4.3 | 44 |
| 07... | 1422 | 56.0 | 215 | 6.9 | 16.5 | 3.9 | 40 |
| AUG | | | | | | | |
| 27... | 1650 | 1.0 | 225 | 8.0 | 30.0 | 8.3 | 108 |
| 27... | 1652 | 10.0 | 225 | 8.0 | 29.0 | 8.7 | 112 |
| 27... | 1654 | 21.0 | 225 | 7.4 | 28.5 | 6.7 | 85 |

### 321113096041201 CEDAR CREEK RESERVOIR SITE AC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMP-LING DEPTH (FT) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | TRANS-PAR-ENCY (SECCHI DISK) (M) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | HARD-NESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | 1600 | 1.0 | 218 | 7.8 | 10.5 | 1.20 | 10.5 | 95 | 64 |
| 24... | 1602 | 10.0 | 218 | 7.8 | 10.5 | -- | 10.5 | 95 | -- |
| 24... | 1604 | 20.0 | 218 | 7.8 | 10.5 | -- | 10.4 | 94 | -- |
| 24... | 1606 | 30.0 | 218 | 7.7 | 10.5 | -- | 10.3 | 93 | -- |
| 24... | 1608 | 40.0 | 218 | 7.7 | 10.5 | -- | 10.3 | 93 | -- |
| 24... | 1610 | 50.0 | 218 | 7.7 | 10.5 | -- | 10.2 | 93 | -- |
| 24... | 1612 | 60.0 | 218 | 7.6 | 10.5 | -- | 10.1 | 92 | 64 |
| MAY | | | | | | | | | |
| 07... | 1426 | 1.0 | 211 | 7.8 | 22.0 | 1.22 | 8.3 | 95 | 62 |
| 07... | 1427 | 2.0 | -- | -- | -- | -- | -- | -- | -- |
| 07... | 1428 | 10.0 | 211 | 7.7 | 20.5 | -- | 8.1 | 91 | -- |
| 07... | 1430 | 20.0 | 211 | 7.4 | 19.5 | -- | 7.4 | 81 | -- |
| 07... | 1432 | 30.0 | 213 | 7.0 | 17.5 | -- | 4.8 | 51 | -- |
| 07... | 1434 | 40.0 | 213 | 6.9 | 17.0 | -- | 4.4 | 46 | -- |
| 07... | 1436 | 50.0 | 215 | 6.9 | 17.0 | -- | 4.0 | 42 | -- |
| 07... | 1438 | 61.0 | 215 | 6.8 | 17.0 | -- | 3.7 | 39 | 65 |
| AUG | | | | | | | | | |
| 27... | 1605 | 1.0 | 225 | 8.0 | 30.0 | 1.46 | 8.0 | 104 | 68 |
| 27... | 1606 | 2.4 | -- | -- | -- | -- | -- | -- | -- |
| 27... | 1607 | 10.0 | 225 | 7.9 | 29.0 | -- | 7.9 | 101 | -- |
| 27... | 1609 | 20.0 | 225 | 7.5 | 28.0 | -- | 7.0 | 88 | -- |
| 27... | 1611 | 30.0 | 225 | 6.6 | 27.5 | -- | 1.6 | 20 | -- |
| 27... | 1613 | 35.0 | 225 | 6.6 | 27.5 | -- | .0 | 0 | -- |
| 27... | 1615 | 40.0 | 234 | 6.6 | 23.5 | -- | .0 | 0 | -- |
| 27... | 1617 | 50.0 | 237 | 6.6 | 20.0 | -- | .0 | 0 | -- |
| 27... | 1619 | 59.0 | 242 | 6.6 | 19.5 | -- | .0 | 0 | 69 |

CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

321113096041201 CEDAR CREEK RESERVOIR SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | ALKALINITY (MG/L AS CACO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | 10 | 19 | 4.0 | 16 | .9 | 4.0 | 54 | 23 | 17 |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | 10 | 19 | 4.1 | 15 | .8 | 3.9 | 54 | 23 | 17 |
| MAY | | | | | | | | | |
| 07... | 14 | 18 | 4.1 | 15 | .8 | 5.0 | 48 | 25 | 16 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | 16 | 19 | 4.2 | 17 | .9 | 3.8 | 49 | 25 | 17 |
| AUG | | | | | | | | | |
| 27... | 14 | 20 | 4.3 | 16 | .8 | 4.1 | 54 | 25 | 19 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | 0 | 20 | 4.5 | 16 | .8 | 3.9 | 82 | 11 | 18 |

| DATE | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | .2 | 3.2 | 119 | .03 | .27 | .30 | .030 | <10 | 1 |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | -- | -- | .03 | .34 | .37 | .010 | 50 | 0 |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | 3.1 | 118 | .03 | .34 | .37 | .030 | 40 | 60 |
| MAY | | | | | | | | | |
| 07... | .1 | 2.7 | 115 | .02 | .67 | .69 | .020 | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | .03 | .76 | .79 | .020 | 10 | 10 |
| 07... | -- | -- | -- | .13 | 1.5 | 1.6 | .030 | 20 | 60 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | 4.0 | 120 | .14 | 1.3 | 1.4 | .040 | 10 | 150 |
| AUG | | | | | | | | | |
| 27... | .2 | 3.6 | 125 | .01 | .32 | .33 | .000 | <10 | 3 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | -- | .02 | .33 | .35 | .030 | 30 | 10 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | -- | .02 | .26 | .28 | .030 | 30 | 70 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | 9.2 | 137 | .01 | .82 | .83 | .640 | 2000 | 3400 |

## CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

### 321116096035301 CEDAR CREEK RESERVOIR SITE AL

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 24... | 1545 | 1.0 | 218 | 7.8 | 10.5 | 10.7 | 97 |
| 24... | 1547 | 10.0 | 218 | 7.8 | 10.5 | 10.7 | 97 |
| 24... | 1549 | 20.0 | 218 | 7.8 | 10.5 | 10.7 | 97 |
| 24... | 1551 | 30.0 | 218 | 7.8 | 10.5 | 10.7 | 97 |
| 24... | 1553 | 40.0 | 218 | 7.8 | 10.5 | 10.6 | 96 |
| 24... | 1555 | 45.0 | 218 | 7.8 | 10.5 | 10.6 | 96 |
| MAY | | | | | | | |
| 07... | 1355 | 1.0 | 211 | 8.2 | 22.5 | 9.2 | 107 |
| 07... | 1358 | 10.0 | 211 | 8.1 | 21.0 | 9.1 | 102 |
| 07... | 1400 | 20.0 | 211 | 7.2 | 18.0 | 6.7 | 71 |
| 07... | 1402 | 30.0 | 213 | 7.0 | 17.5 | 5.8 | 61 |
| 07... | 1404 | 39.0 | 213 | 6.9 | 17.0 | 4.9 | 51 |
| AUG | | | | | | | |
| 27... | 1635 | 1.0 | 225 | 8.0 | 30.0 | 8.0 | 104 |
| 27... | 1637 | 10.0 | 225 | 8.0 | 28.5 | 8.4 | 106 |
| 27... | 1639 | 20.0 | 225 | 7.5 | 28.0 | 7.0 | 88 |
| 27... | 1641 | 30.0 | 225 | 6.5 | 27.5 | .5 | 6 |
| 27... | 1643 | 40.0 | 234 | 6.7 | 23.5 | .0 | 0 |
| 27... | 1645 | 51.0 | 236 | 6.6 | 20.5 | .0 | 0 |

### 321227096032701 CEDAR CREEK RESERVOIR SITE BC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 24... | 1515 | 1.0 | 218 | 7.7 | 10.5 | 1.20 | 10.5 |
| 24... | 1518 | 10.0 | 218 | 7.7 | 10.5 | -- | 10.5 |
| 24... | 1520 | 20.0 | 218 | 7.7 | 10.5 | -- | 10.4 |
| 24... | 1522 | 30.0 | 218 | 7.7 | 10.5 | -- | 10.4 |
| 24... | 1524 | 40.0 | 218 | 7.7 | 10.5 | -- | 10.3 |
| 24... | 1526 | 49.0 | 218 | 7.6 | 10.5 | -- | 10.1 |
| MAY | | | | | | | |
| 07... | 1330 | 1.0 | 211 | 8.0 | 23.0 | 1.19 | 8.7 |
| 07... | 1332 | 10.0 | 211 | 7.9 | 20.5 | -- | 8.3 |
| 07... | 1334 | 20.0 | 211 | 7.5 | 20.0 | -- | 7.6 |
| 07... | 1336 | 30.0 | 213 | 7.1 | 18.0 | -- | 5.5 |
| 07... | 1338 | 40.0 | 215 | 6.9 | 17.0 | -- | 4.5 |
| 07... | 1340 | 52.0 | 215 | 6.8 | 16.5 | -- | 3.8 |
| AUG | | | | | | | |
| 27... | 1540 | 1.0 | 225 | 8.2 | 31.0 | 1.65 | 8.3 |
| 27... | 1542 | 10.0 | 225 | 8.1 | 29.0 | -- | 8.5 |
| 27... | 1544 | 20.0 | 225 | 7.1 | 28.5 | -- | 5.3 |
| 27... | 1546 | 25.0 | 225 | 6.8 | 28.0 | -- | 3.7 |
| 27... | 1548 | 30.0 | 225 | 6.5 | 27.5 | -- | .2 |
| 27... | 1550 | 40.0 | 236 | 6.7 | 24.0 | -- | .0 |
| 27... | 1552 | 47.0 | 236 | 6.6 | 21.0 | -- | .0 |

| DATE | OXYGEN, DISSOLVED (PERCENT SATURATION) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 24... | 95 | .04 | .22 | .26 | .010 | 10 | 0 |
| 24... | 95 | -- | -- | -- | -- | -- | -- |
| 24... | 94 | -- | -- | -- | -- | -- | -- |
| 24... | 94 | -- | -- | -- | -- | -- | -- |
| 24... | 93 | -- | -- | -- | -- | -- | -- |
| 24... | 91 | .04 | .32 | .36 | .010 | 20 | 0 |
| MAY | | | | | | | |
| 07... | 102 | .02 | .83 | .85 | .030 | 50 | 20 |
| 07... | 92 | -- | -- | -- | -- | -- | -- |
| 07... | 84 | -- | -- | -- | -- | -- | -- |
| 07... | 59 | -- | -- | -- | -- | -- | -- |
| 07... | 47 | -- | -- | -- | -- | -- | -- |
| 07... | 39 | .19 | .86 | 1.1 | .040 | 30 | 160 |
| AUG | | | | | | | |
| 27... | 109 | .01 | .29 | .30 | .020 | 10 | 100 |
| 27... | 109 | -- | -- | -- | -- | -- | -- |
| 27... | 67 | -- | -- | -- | -- | -- | -- |
| 27... | 46 | -- | -- | -- | -- | -- | -- |
| 27... | 2 | -- | -- | -- | -- | -- | -- |
| 27... | 0 | -- | -- | -- | -- | -- | -- |
| 27... | 0 | .01 | .28 | .29 | .300 | 1600 | 2700 |

## CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

### 321403096060601 CEDAR CREEK RESERVOIR SITE CC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 24... | 1450 | 1.0 | 218 | 7.8 | 10.5 | 10.7 | 97 |
| 24... | 1452 | 10.0 | 218 | 7.8 | 10.5 | 10.7 | 97 |
| 24... | 1454 | 20.0 | 218 | 7.8 | 10.5 | 10.7 | 97 |
| 24... | 1456 | 30.0 | 218 | 7.8 | 10.5 | 10.7 | 97 |
| 24... | 1458 | 40.0 | 218 | 7.8 | 10.5 | 10.7 | 97 |
| 24... | 1500 | 50.0 | 218 | 7.8 | 10.5 | 10.6 | 96 |
| MAY | | | | | | | |
| 07... | 1312 | 1.0 | 208 | 8.1 | 22.5 | 9.0 | 105 |
| 07... | 1314 | 10.0 | 208 | 7.6 | 20.5 | 8.2 | 92 |
| 07... | 1316 | 20.0 | 208 | 7.4 | 20.0 | 7.9 | 88 |
| 07... | 1318 | 30.0 | 209 | 7.1 | 18.0 | 6.3 | 67 |
| 07... | 1320 | 42.0 | 212 | 6.8 | 17.0 | 4.2 | 44 |
| AUG | | | | | | | |
| 27... | 1518 | 1.0 | 225 | 8.3 | 31.0 | 8.8 | 116 |
| 27... | 1520 | 10.0 | 225 | 7.8 | 29.0 | 7.2 | 92 |
| 27... | 1522 | 20.0 | 225 | 7.3 | 28.5 | 6.0 | 76 |
| 27... | 1524 | 30.0 | 225 | 6.8 | 28.0 | 2.7 | 34 |
| 27... | 1526 | 35.0 | 225 | 6.6 | 27.5 | .0 | 0 |
| 27... | 1528 | 40.0 | 247 | 6.7 | 24.0 | .0 | 0 |
| 27... | 1530 | 49.0 | 247 | 6.7 | 22.0 | .0 | 0 |

### 321548096082301 CEDAR CREEK RESERVOIR SITE DC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | 1415 | 1.0 | 211 | 7.7 | 10.5 | .80 | 10.5 | 95 | 60 |
| 24... | 1418 | 10.0 | 211 | 7.7 | 10.5 | -- | 10.5 | 95 | -- |
| 24... | 1420 | 20.0 | 211 | 7.7 | 10.5 | -- | 10.5 | 95 | -- |
| 24... | 1422 | 30.0 | 211 | 7.7 | 10.5 | -- | 10.5 | 95 | -- |
| 24... | 1424 | 41.0 | 215 | 7.5 | 10.0 | -- | 10.1 | 90 | 60 |
| MAY | | | | | | | | | |
| 07... | 1247 | 1.0 | 208 | 7.9 | 21.5 | .64 | 8.7 | 99 | 61 |
| 07... | 1250 | 10.0 | 208 | 7.4 | 20.0 | -- | 7.8 | 87 | -- |
| 07... | 1252 | 20.0 | 208 | 7.1 | 18.5 | -- | 6.4 | 69 | -- |
| 07... | 1254 | 30.0 | 208 | 7.0 | 18.0 | -- | 5.8 | 62 | -- |
| 07... | 1256 | 41.0 | 208 | 6.9 | 18.0 | -- | 5.2 | 55 | 61 |
| AUG | | | | | | | | | |
| 27... | 1445 | 1.0 | 225 | 8.4 | 32.0 | 1.13 | 8.9 | 119 | 65 |
| 27... | 1447 | 10.0 | 225 | 8.3 | 29.5 | -- | 8.6 | 112 | -- |
| 27... | 1449 | 20.0 | 228 | 7.6 | 29.0 | -- | 6.0 | 77 | -- |
| 27... | 1451 | 30.0 | 228 | 7.1 | 29.0 | -- | 4.8 | 62 | -- |
| 27... | 1453 | 40.0 | 249 | 6.7 | 26.5 | -- | .0 | 0 | 74 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | ALKALINITY (MG/L AS CACO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | 7 | 18 | 3.6 | 14 | .8 | 3.9 | 53 | 24 | 18 |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | 6 | 18 | 3.7 | 15 | .8 | 3.8 | 54 | 24 | 17 |
| MAY | | | | | | | | | |
| 07... | 14 | 18 | 4.0 | 15 | .8 | 3.8 | 48 | 25 | 16 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | 15 | 18 | 4.0 | 14 | .8 | 3.8 | 47 | 26 | 17 |
| AUG | | | | | | | | | |
| 27... | 10 | 19 | 4.2 | 16 | .9 | 4.4 | 55 | 28 | 19 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | 0 | 22 | 4.7 | 16 | .8 | 4.1 | 78 | 18 | 19 |

## CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

### 321548096082301 CEDAR CREEK RESERVOIR SITE DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | IRON, DIS-SOLVED (UG/L AS FE) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | |
| 24... | 3.3 | 116 | .04 | .47 | .51 | .040 | 20 | <1 |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | -- | .04 | .47 | .51 | .040 | 60 | 0 |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | 3.0 | 117 | .04 | .43 | .47 | .030 | 10 | 5 |
| MAY | | | | | | | | |
| 07... | 3.3 | 114 | .03 | .71 | .74 | .040 | 230 | 20 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | .10 | .68 | .78 | .040 | 290 | 40 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | 3.7 | 115 | .07 | .76 | .83 | .050 | 50 | 10 |
| AUG | | | | | | | | |
| 27... | 3.3 | 127 | .00 | .19 | .19 | .000 | 40 | 6 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | .01 | .40 | .41 | .050 | 30 | 120 |
| 27... | 7.8 | 138 | .01 | 2.0 | 2.0 | .600 | 0 | 3 |

### 321818096064301 CEDAR CREEK RESERVOIR SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMP-LING DEPTH (FT) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | TRANS-PAR-ENCY (SECCHI DISK) (M) | OXYGEN, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 24... | 1350 | 1.0 | 241 | 7.4 | 10.5 | .40 | 10.0 |
| 24... | 1352 | 10.0 | 241 | 7.4 | 10.5 | -- | 10.0 |
| 24... | 1354 | 20.0 | 222 | 7.3 | 10.5 | -- | 9.8 |
| MAY | | | | | | | |
| 07... | 1226 | 1.0 | 218 | 8.1 | 24.0 | .55 | 8.7 |
| 07... | 1228 | 10.0 | 218 | 7.9 | 22.5 | -- | 8.0 |
| 07... | 1230 | 21.0 | 218 | 7.2 | 21.5 | -- | 6.8 |
| AUG | | | | | | | |
| 27... | 1415 | 1.0 | 227 | 8.5 | 32.0 | 1.01 | 9.7 |
| 27... | 1417 | 10.0 | 227 | 8.3 | 30.0 | -- | 8.3 |
| 27... | 1419 | 18.0 | 232 | 7.7 | 30.0 | -- | 5.8 |

| DATE | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | IRON, DIS-SOLVED (UG/L AS FE) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 24... | 90 | .06 | .44 | .50 | .060 | 70 | 20 |
| 24... | 90 | -- | -- | -- | -- | -- | -- |
| 24... | 89 | .06 | .42 | .48 | .070 | 60 | 10 |
| MAY | | | | | | | |
| 07... | 104 | .01 | .79 | .80 | .040 | 20 | 0 |
| 07... | 93 | -- | -- | -- | -- | -- | -- |
| 07... | 77 | .03 | .77 | .80 | .050 | 40 | 0 |
| AUG | | | | | | | |
| 27... | 129 | .00 | .53 | .53 | .040 | 80 | 30 |
| 27... | 108 | -- | -- | -- | -- | -- | -- |
| 27... | 75 | .00 | .51 | .51 | .060 | 110 | 20 |

## CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

### 321843096101701 CEDAR CREEK RESERVOIR SITE FC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 24... | 1330 | 1.0 | 206 | 7.7 | 10.5 | 10.7 | 97 |
| 24... | 1332 | 10.0 | 206 | 7.6 | 10.5 | 10.7 | 97 |
| 24... | 1334 | 20.0 | 206 | 7.6 | 10.5 | 10.6 | 96 |
| 24... | 1336 | 27.0 | 206 | 7.5 | 10.0 | 10.3 | 92 |
| MAY | | | | | | | |
| 07... | 1205 | 1.0 | 206 | 8.2 | 24.0 | 9.1 | 108 |
| 07... | 1208 | 10.0 | 206 | 7.1 | 21.0 | 7.0 | 79 |
| 07... | 1210 | 20.0 | 206 | 6.8 | 19.0 | 5.4 | 59 |
| 07... | 1212 | 30.0 | 206 | 6.8 | 18.5 | 4.7 | 51 |
| 07... | 1214 | 35.0 | 206 | 6.7 | 18.5 | 4.5 | 48 |
| AUG | | | | | | | |
| 27... | 1400 | 1.0 | 227 | 8.5 | 31.5 | 9.3 | 122 |
| 27... | 1402 | 10.0 | 227 | 8.0 | 30.0 | 7.3 | 95 |
| 27... | 1404 | 20.0 | 235 | 6.9 | 29.5 | 3.5 | 45 |
| 27... | 1406 | 32.0 | 235 | 6.8 | 29.0 | 2.8 | 36 |

### 322119096104901 CEDAR CREEK RESERVOIR SITE GR

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 24... | 1740 | 1.0 | 150 | 7.3 | 10.0 | 9.7 | 87 |
| 24... | 1742 | 10.0 | 148 | 7.3 | 10.0 | 9.7 | 87 |
| 24... | 1744 | 18.0 | 145 | 7.2 | 10.0 | 9.6 | 86 |
| MAY | | | | | | | |
| 07... | 1545 | 1.0 | 200 | 7.2 | 25.5 | 7.6 | 93 |
| 07... | 1548 | 10.0 | 200 | 7.0 | 21.0 | 6.6 | 74 |
| 07... | 1550 | 18.0 | 200 | 7.0 | 21.5 | 6.3 | 72 |

### 322119096095401 CEDAR CREEK RESERVOIR SITE GC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | 1715 | 1.0 | 204 | 7.6 | 10.0 | .30 | 10.5 | 94 | 57 |
| 24... | 1718 | 10.0 | 204 | 7.6 | 10.0 | -- | 10.5 | 94 | -- |
| 24... | 1720 | 24.0 | 204 | 7.6 | 10.0 | -- | 10.4 | 93 | 57 |
| MAY | | | | | | | | | |
| 07... | 1530 | 1.0 | 200 | 7.3 | 23.0 | .30 | 7.3 | 86 | 61 |
| 07... | 1533 | 10.0 | 200 | 7.1 | 22.0 | -- | 6.7 | 77 | -- |
| 07... | 1536 | 20.0 | 200 | 7.0 | 21.0 | -- | 6.4 | 72 | -- |
| 07... | 1540 | 29.0 | 206 | 6.7 | 20.5 | -- | 3.7 | 41 | 61 |
| AUG | | | | | | | | | |
| 27... | 1745 | 1.0 | 233 | 8.4 | 30.0 | .60 | 8.7 | 113 | 67 |
| 27... | 1747 | 10.0 | 233 | 7.6 | 29.0 | -- | 6.3 | 81 | -- |
| 27... | 1749 | 17.0 | 237 | 7.0 | 29.0 | -- | 3.7 | 47 | 67 |

## CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

### 322119096095401 CEDAR CREEK RESERVOIR SITE GC--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | ALKALINITY (MG/L AS CACO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | 6 | 17 | 3.6 | 15 | .9 | 3.9 | 51 | 23 | 17 |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | 7 | 17 | 3.5 | 15 | .9 | 3.8 | 50 | 24 | 15 |
| MAY | | | | | | | | | |
| 07... | 18 | 18 | 3.9 | 13 | .7 | 3.9 | 43 | 26 | 15 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | 15 | 18 | 4.0 | 13 | .7 | 4.0 | 46 | 26 | 15 |
| AUG | | | | | | | | | |
| 27... | 11 | 20 | 4.1 | 16 | .9 | 4.5 | 56 | 27 | 20 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | 9 | 20 | 4.1 | 17 | .9 | 4.4 | 58 | 27 | 20 |

| DATE | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | |
| 24... | 4.6 | 115 | .10 | .22 | .32 | .060 | 80 | 3 |
| 24... | -- | -- | .09 | .43 | .52 | .040 | 50 | 0 |
| 24... | 4.4 | 113 | .10 | .43 | .53 | .060 | 160 | 20 |
| MAY | | | | | | | | |
| 07... | 6.1 | 113 | .10 | .84 | .94 | .080 | 640 | 60 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | .19 | .88 | 1.1 | .090 | 540 | 70 |
| 07... | 7.1 | 116 | .08 | 1.1 | 1.2 | .100 | 820 | 140 |
| AUG | | | | | | | | |
| 27... | 4.9 | 130 | .01 | .60 | .61 | .040 | 150 | 30 |
| 27... | -- | -- | .00 | .41 | .41 | .060 | 10 | 10 |
| 27... | 4.4 | 132 | .01 | .95 | .96 | .120 | <10 | 100 |

### 321113096041201 CEDAR CREEK RESERVOIR SITE AC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | ARSENIC DISSOLVED (UG/L AS AS) | BARIUM, DISSOLVED (UG/L AS BA) | CADMIUM DISSOLVED (UG/L AS CD) | CHROMIUM, DISSOLVED (UG/L AS CR) | COPPER, DISSOLVED (UG/L AS CU) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 24... | 1600 | 1.0 | 1 | 50 | <1 | 0 | 0 |
| 24... | 1606 | 30 | -- | -- | -- | -- | -- |
| 24... | 1612 | 60 | 1 | 50 | <1 | 0 | 1 |
| MAY | | | | | | | |
| 07... | 1430 | 20 | -- | -- | -- | -- | -- |
| 07... | 1432 | 30 | -- | -- | -- | -- | -- |
| 07... | 1438 | 61 | 1 | 50 | 2 | 0 | 0 |
| AUG | | | | | | | |
| 27... | 1605 | 1.0 | 2 | 40 | <1 | 0 | 0 |
| 27... | 1609 | 20.0 | -- | -- | -- | -- | -- |
| 27... | 1613 | 35.0 | -- | -- | -- | -- | -- |
| 27... | 1619 | 59.0 | 11 | 90 | <1 | 0 | 0 |

| DATE | IRON, DISSOLVED (UG/L AS FE) | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY DISSOLVED (UG/L AS HG) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 24... | <10 | 0 | 1 | .0 | 0 | 0 | <3 |
| 24... | 50 | -- | 0 | -- | -- | -- | -- |
| 24... | 40 | 0 | 60 | .0 | 0 | 0 | 3 |
| MAY | | | | | | | |
| 07... | 10 | -- | 10 | -- | -- | -- | -- |
| 07... | 20 | -- | 60 | -- | -- | -- | -- |
| 07... | 10 | 0 | 150 | .4 | 0 | 0 | <3 |
| AUG | | | | | | | |
| 27... | <10 | 0 | 3 | .0 | 0 | 0 | <3 |
| 27... | 30 | -- | 10 | -- | -- | -- | -- |
| 27... | 30 | -- | 70 | -- | -- | -- | -- |
| 27... | 2000 | 5 | 3400 | .0 | 0 | 0 | <3 |

## CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

### 321113096041201 CEDAR CREEK RESERVOIR SITE AC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| DATE | JAN 24,80 | MAY 7,80 | AUG 27,80 |
|---|---|---|---|
| TIME | 1601 | 1427 | 1606 |
| TOTAL CELLS/ML | 25000 | 5300 | 110000 |
| DIVERSITY: DIVISION | 1.4 | 1.1 | 0.1 |
| .CLASS | 1.4 | 1.1 | 0.1 |
| ..ORDER | 1.5 | 1.5 | 0.7 |
| ...FAMILY | 1.8 | 2.1 | 1.4 |
| ....GENUS | 2.7 | 3.0 | 2.0 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...HYDRODICTYACEAE | | | | | | |
| ....PEDIASTRUM | 260 | 1 | -- | - | -- | - |
| ...MICRACTINIACEAE | | | | | | |
| ....GOLENKINIA | -- | - | 50 | 1 | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 450 | 2 | 570 | 11 | * | 0 |
| ....CHLORELLA | 1500 | 6 | -- | - | -- | - |
| ....CHODATELLA | 190 | 1 | 150 | 3 | -- | - |
| ....DICTYOSPHAERIUM | -- | - | -- | - | * | 0 |
| ....KIRCHNERIELLA | 320 | 1 | 67 | 1 | -- | - |
| ....OOCYSTIS | 260 | 1 | 84 | 2 | -- | - |
| ....SELENASTRUM | -- | - | -- | - | * | 0 |
| ....TETRAEDRON | * | 0 | -- | - | * | 0 |
| ....TREUBARIA | -- | - | * | 0 | -- | - |
| ...SCENEDESMACEAE | | | | | | |
| ....CRUCIGENIA | -- | - | 870# | 16 | -- | - |
| ....SCENEDESMUS | 1400 | 6 | 1300# | 24 | -- | - |
| ....TETRASTRUM | 450 | 2 | 130 | 3 | -- | - |
| ..TETRASPORALES | | | | | | |
| ...PALMELLACEAE | | | | | | |
| ....GLOEOCYSTIS | -- | - | 67 | 1 | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | 190 | 1 | -- | - | * | 0 |
| ..ZYGNEMATALES | | | | | | |
| ...DESMIDIACEAE | | | | | | |
| ....EUASTRUM | -- | - | * | 0 | -- | - |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 4800# | 19 | * | 0 | * | 0 |
| ....MELOSIRA | 640 | 3 | 34 | 1 | -- | - |
| ..PENNALES | | | | | | |
| ...ACHNANTHACEAE | | | | | | |
| ....ACHNANTHES | * | 0 | -- | - | -- | - |
| ...FRAGILARIACEAE | | | | | | |
| ....SYNEDRA | -- | - | 50 | 1 | -- | - |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | -- | - | * | 0 | -- | - |
| ...SURIRELLACEAE | | | | | | |
| ....SURIRELLA | 130 | 1 | -- | - | -- | - |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | * | 0 | -- | - | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | 5100# | 21 | -- | - | 700 | 1 |
| ....ANACYSTIS | 9000# | 36 | 1400# | 26 | 15000 | 14 |
| ....COCCOCHLORIS | -- | - | 130 | 3 | -- | - |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENOPSIS | -- | - | -- | - | 16000 | 15 |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | -- | - | 52000# | 48 |
| ....OSCILLATORIA | -- | - | 340 | 6 | 21000# | 20 |
| ...RIVULARIACEAE | | | | | | |
| ....RAPHIDIOPSIS | -- | - | -- | - | 1800 | 2 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....EUGLENA | -- | - | * | 0 | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

### 322119096095401 CEDAR CREEK RESERVOIR SITE GC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| DATE<br>TIME | JAN 24,80<br>1716 | MAY 7,80<br>1531 | AUG 27,80<br>1746 |
|---|---|---|---|
| TOTAL CELLS/ML | 87000 | 5000 | 390000 |
| DIVERSITY: DIVISION | 1.5 | 1.7 | 0.2 |
| .CLASS | 1.5 | 1.7 | 0.2 |
| ..ORDER | 1.6 | 2.2 | 0.7 |
| ...FAMILY | 1.9 | 2.3 | 1.2 |
| ....GENUS | 2.5 | 2.6 | 2.1 |

| ORGANISM | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT | CELLS /ML | PER-CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...HYDRODICTYACEAE | | | | | | |
| ....PEDIASTRUM | 3900 | 4 | -- | - | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 2300 | 3 | 180 | 4 | * | 0 |
| ....CHLORELLA | 1600 | 2 | 25 | 1 | -- | - |
| ....CHODATELLA | * | 0 | 25 | 1 | -- | - |
| ....DICTYOSPHAERIUM | -- | - | -- | - | * | 0 |
| ....KIRCHNERIELLA | 2900 | 3 | -- | - | -- | - |
| ....OOCYSTIS | 1300 | 1 | -- | - | -- | - |
| ....SELENASTRUM | -- | - | -- | - | * | 0 |
| ....TREUBARIA | -- | - | -- | - | * | 0 |
| ...SCENEDESMACEAE | | | | | | |
| ....SCENEDESMUS | -- | - | 800# | 16 | * | 0 |
| ....TETRASTRUM | 4500 | 5 | -- | - | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | 500 | 10 | * | 0 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 21000# | 25 | 1200# | 25 | * | 0 |
| ....MELOSIRA | 650 | 1 | 150 | 3 | -- | - |
| ..PENNALES | | | | | | |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 2300 | 3 | 230 | 5 | * | 0 |
| ...SURIRELLACEAE | | | | | | |
| ....SURIRELLA | -- | - | -- | - | * | 0 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | | | |
| ....CHROOMONAS | -- | - | -- | - | * | 0 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | 10000 | 12 | -- | - | 16000 | 4 |
| ....ANACYSTIS | 36000# | 41 | 1700# | 34 | 37000 | 9 |
| ....COCCOCHLORIS | -- | - | 50 | 1 | -- | - |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENOPSIS | -- | - | -- | - | 31000 | 8 |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | -- | - | 150000# | 39 |
| ....OSCILLATORIA | -- | - | -- | - | 140000# | 37 |
| ...RIVULARIACEAE | | | | | | |
| ....RAPHIDIOPSIS | -- | - | -- | - | 4500 | 1 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....PHACUS | -- | - | 25 | 1 | -- | - |
| ....TRACHELOMONAS | -- | - | 25 | 1 | * | 0 |
| PYRRHOPHYTA (FIRE ALGAE) | | | | | | |
| .DINOPHYCEAE | | | | | | |
| ..PERIDINIALES | | | | | | |
| ...GLENODINIACEAE | | | | | | |
| ....GLENODINIUM | -- | - | 25 | 1 | * | 0 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 08063050 NAVARRO MILLS LAKE NEAR DAWSON, TX

**LOCATION.**--Lat 31°57'27", long 96°41'21", Navarro County, Hydrologic Unit 12030108, in left abutment of spillway of Navarro Mills Dam on Richland Creek, 1.7 mi (2.7 km) upstream from bridge on State Highway 31, 3.0 mi (4.8 km) upstream from St. Louis Southwestern Railway Lines bridge, 4.2 mi (6.8 km) upstream from Post Oak Creek, 4.6 mi (7.4 km) north of Dawson, and 63.9 mi (102.8 km) upstream from mouth.

**DRAINAGE AREA.**--320 mi² (829 km²).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--August 1962 to current year. Prior to October 1970, published as Navarro Mills Reservoir.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 8, 1962, nonrecording gage in low-water channel at same datum. Corps of Engineers gage-height telemeter at station.

**REMARKS.**--The lake is formed by a rolled earthfill dam 7,570 ft (2,310 m) long, including a 240-foot (73 m) off-channel gated spillway with six 40.0- by 29.0-foot (12.2 by 8.8 m) tainter gates. From Aug. 27, 1962, to Mar. 14, 1963, the lake was operated as a detention basin only. Deliberate impoundment began Mar. 15, 1963, and the dam was completed in September 1963. The low-flow outlet works consist of two 36-inch-diameter (914 mm) gate-controlled conduits. The lake was built for flood control and water conservation. The capacity table prior to September 1976 is based on a survey made in February 1956 by the Corps of Engineers. Capacity table after Aug. 31, 1976, is based on a sedimentation survey made in September 1972. Flow is affected at times by discharge from flood-detention pools of 49 floodwater-retarding structures with combined detention capacity of 25,760 acre-ft (31.8 hm³). These structures control runoff from 85.6 mi² (221.7 km²) in the Richland Creek drainage basin. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 457.0 | |
| Design flood | 451.9 | 329,500 |
| Top of gates (top of flood-control storage pool) | 443.0 | 206,300 |
| Top of conservation pool | 424.5 | 56,960 |
| Crest of spillway | 416.0 | 18,840 |
| Lowest gated outlet (invert) | 400.0 | 1,150 |

**COOPERATION.**--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents, 183,300 acre-ft (226 hm³) May 18, 1968, elevation, 440.36 ft (134.222 m); minimum since initial filling in May 1965, 32,490 acre-ft (40.1 hm³) Dec. 28, 1978, elevation, 418.89 ft (127.678 m).

**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 92,060 acre-ft (114 hm³) May 20 at 0800 hours, elevation, 430.39 ft (131.183 m); minimum, 42,850 acre-ft (52.8 hm³) Sept. 24 at 2200 hours, elevation, 421.50 ft (128.473 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 421.0 | 40,710 | 427.0 | 70,390 |
| 423.0 | 49,590 | 429.0 | 82,620 |
| 425.0 | 59,520 | 431.0 | 96,400 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 53670 | 52300 | 50700 | 57720 | 57670 | 57620 | 57010 | 66120 | 59830 | 54510 | [illegible] | [illegible] |
| 2 | 53520 | 52200 | 50550 | 57370 | 57470 | 57570 | 57520 | 63950 | 58540 | 54310 | [illegible] | [illegible] |
| 3 | 53370 | 52100 | 50550 | 56960 | 57170 | 57570 | 59110 | 61660 | 57570 | 54160 | [illegible] | [illegible] |
| 4 | 53180 | 51950 | 50500 | 56760 | 57010 | 57620 | 59310 | 59160 | 57220 | 54010 | [illegible] | [illegible] |
| 5 | 53130 | 51950 | 50500 | 56810 | 57120 | 57570 | 59470 | 57720 | 57170 | 53770 | [illegible] | [illegible] |
| 6 | 52930 | 51760 | 50410 | 56860 | 57120 | 57570 | 59680 | 57830 | 57120 | 53620 | [illegible] | [illegible] |
| 7 | 52880 | 51760 | 50360 | 56810 | 57120 | 57670 | 59520 | 60540 | 57120 | 53570 | [illegible] | [illegible] |
| 8 | 52780 | 51760 | 50260 | 56760 | 59620 | 57720 | 58850 | 64710 | 57010 | 53370 | [illegible] | [illegible] |
| 9 | 52490 | 51710 | 50220 | 56760 | 62510 | 57720 | 58240 | 64380 | 57010 | 53180 | [illegible] | [illegible] |
| 10 | 52340 | 51570 | 50220 | 56860 | 63310 | 57780 | 57570 | 62820 | 56960 | 53030 | [illegible] | [illegible] |
| 11 | 52250 | 51470 | 50170 | 56760 | 63060 | 58240 | 58590 | 61030 | 56910 | [illegible] | [illegible] | [illegible] |
| 12 | 52100 | 51420 | 50310 | 56710 | 61610 | 58590 | 62030 | 59620 | 56760 | [illegible] | [illegible] | [illegible] |
| 13 | 52000 | 51320 | 50220 | 56710 | 59930 | 58490 | 74970 | 58750 | 56660 | [illegible] | [illegible] | [illegible] |
| 14 | 51860 | 51280 | 50120 | 56710 | 58390 | 58390 | 78600 | 59880 | 56610 | [illegible] | [illegible] | [illegible] |
| 15 | 52250 | 51230 | 50070 | 56760 | 57220 | 58390 | 78220 | 74010 | 56510 | [illegible] | [illegible] | [illegible] |
| 16 | 52300 | 51180 | 49980 | 56810 | 57010 | 58800 | 75820 | 86810 | 56410 | [illegible] | [illegible] | [illegible] |
| 17 | 52250 | 51130 | 49930 | 56760 | 56910 | 58800 | 72820 | 89200 | 56310 | [illegible] | [illegible] | [illegible] |
| 18 | 52200 | 51280 | 49830 | 56760 | 57010 | 58800 | 70330 | 90720 | 56160 | [illegible] | [illegible] | [illegible] |
| 19 | 52100 | 51280 | 49830 | 56760 | 57060 | 58800 | 68010 | 91910 | 56100 | [illegible] | [illegible] | [illegible] |
| 20 | 52050 | 51230 | 49830 | 57620 | 57170 | 58850 | 63630 | 90580 | 55960 | [illegible] | [illegible] | [illegible] |
| 21 | 52000 | 51230 | 50700 | 58180 | 57220 | 58750 | 63250 | 88030 | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | 52000 | 51420 | 51910 | 67840 | 57320 | 58640 | 60980 | 84930 | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | 51860 | 51280 | 56460 | 70210 | 57370 | 58850 | 58490 | 81590 | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | 51760 | 51280 | 58750 | 71130 | 57420 | 58700 | 58180 | 78410 | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | 51660 | 51280 | 59160 | 69820 | 57270 | 58700 | 75270 | 75210 | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | 51570 | 51230 | 59270 | 68010 | 57370 | 58700 | 76670 | 71890 | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | 51520 | 51130 | 59060 | 65580 | 57420 | 59680 | 77230 | 69130 | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | 51370 | 51080 | 58850 | 63360 | 57470 | 59730 | 75210 | 66730 | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | 51180 | 50890 | 58850 | 61290 | 57620 | 58340 | 71890 | 64270 | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | 52250 | 50740 | 58640 | 59000 | --- | 57370 | 68460 | 62510 | 54460 | [illegible] | [illegible] | [illegible] |
| 31 | 52340 | --- | 58180 | 57980 | --- | 57010 | --- | 61240 | --- | [illegible] | [illegible] | --- |
| MAX | 53670 | 52300 | 59270 | 71130 | 63310 | 59730 | 78600 | 91910 | 59830 | 54510 | [illegible] | [illegible] |
| MIN | 51180 | 50740 | 49830 | 56710 | 56910 | 57010 | 57010 | 57720 | 54460 | [illegible] | [illegible] | [illegible] |
| (†) | 423.57 | 423.24 | 424.74 | 424.70 | 424.63 | 424.31 | 426.66 | 425.33 | 424.06 | 422.96 | [illegible] | [illegible] |
| (‡) | -1480 | -1600 | +7440 | -200 | -380 | -610 | +11450 | -7220 | -6780 | [illegible] | [illegible] | [illegible] |
| (††) | 566 | 507 | 519 | 505 | 486 | 499 | 480 | 504 | 617 | 725 | [illegible] | [illegible] |

CAL YR 1979 MAX 105600 MIN 33170 ‡ +24610 †† 6400
WTR YR 1980 MAX 91910 MIN 42980 ‡ -10060 †† 6680

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal use by cities of Dawson, Corsicana, and Post Oak.

## 08063050 NAVARRO MILLS LAKE NEAR DAWSON, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO |
|---|---|---|---|---|---|---|---|---|---|
| AUG | | | | | | | | | |
| 20... | 1720 | 328 | 26.5 | 120 | 9 | 44 | 3.5 | 15 | .6 |

| DATE | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|
| AUG | | | | | | | | |
| 20... | 4.6 | 140 | 0 | 33 | 13 | .4 | 8.0 | 191 |

## 08063100 RICHLAND CREEK NEAR DAWSON, TX

LOCATION.--Lat 31°56'18", long 96°40'52", Navarro County, Hydrologic Unit 12030108, at downstream side of bridge on State Highway 31, 1.3 mi (2.1 km) upstream from St. Louis Southwestern Railway Lines bridge, 1.7 mi (2.7 km) downstream from Navarro Mills Dam, 2.5 mi (4.0 km) upstream from Post Oak Creek, and 3.6 mi (5.8 km) northeast of Dawson.

DRAINAGE AREA.--333 mi$^2$ (862 km$^2$).

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 370.52 ft (112.934 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 21, 1960, nonrecording gage at same site and datum.

REMARKS.--Records fair. Flow regulated since Mar. 15, 1963, by Navarro Mills Lake (station 08063050). Water is diverted from Navarro Mills Lake for municipal use. Flow is affected at times by discharge from the flood-detention pool of a floodwater-retarding structure with a detention capacity of 297 acre-ft (366,000 m$^3$). This structure controls runoff from 1.28 mi$^2$ (3.32 km$^2$). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--20 years, 153 ft$^3$/s (4.333 m$^3$/s), 110,800 acre-ft/yr (137 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,500 ft$^3$/s (722 m$^3$/s) July 3, 1961, gage height, 22.50 ft (6.858 m), from rating curve extended above 14,000 ft$^3$/s (396 m$^3$/s); no flow at times. Maximum discharge since completion of Navarro Mills Dam in 1963, 3,850 ft$^3$/s (109 m$^3$/s) Nov. 24, 1974, gage height, 19.85 ft (6.050 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1895, about 28 ft (8.5 m) June 19, 1929, from information by local residents. Floods in 1946 and 1957 reached a stage of about 23 ft (7.0 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,950 ft$^3$/s (55.2 m$^3$/s) Apr. 29 at 0230 hours, gage height, 17.16 ft (5.230 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.5 | 8.4 | 9.1 | 188 | 159 | .90 | 2.5 | 1480 | 671 | 6.0 | 10 | 11 |
| 2 | 2.5 | 8.0 | 9.1 | 186 | 158 | .80 | 1.9 | 1340 | 661 | 7.0 | 10 | 11 |
| 3 | 2.5 | 8.0 | 9.1 | 186 | 156 | .80 | 3.5 | 1320 | 472 | 7.0 | 10 | 11 |
| 4 | 2.5 | 8.0 | 9.1 | 79 | 111 | .80 | .81 | 1300 | 204 | 7.0 | 10 | 11 |
| 5 | 2.7 | 8.0 | 9.0 | 1.5 | 3.6 | .80 | .53 | 997 | 1.4 | 7.0 | 10 | 11 |
| 6 | 2.7 | 8.0 | 8.9 | 1.2 | 2.2 | .60 | .53 | 263 | .51 | 7.0 | 10 | 11 |
| 7 | 2.7 | 8.0 | 8.7 | 1.1 | 2.1 | .60 | 99 | 7.2 | .19 | 7.0 | 10 | 11 |
| 8 | 3.0 | 8.0 | 8.2 | 1.0 | 104 | .60 | 304 | 128 | .14 | 7.0 | 10 | 8.1 |
| 9 | 2.7 | 8.2 | 8.2 | 1.0 | 64 | .60 | 309 | 597 | .10 | 7.0 | 10 | .55 |
| 10 | 2.5 | 8.2 | 8.3 | 1.0 | 16 | .45 | 306 | 1150 | .19 | 7.0 | 11 | .04 |
| 11 | 2.5 | 8.2 | 8.2 | 1.1 | 291 | .45 | 230 | 1120 | .06 | 7.0 | 11 | .00 |
| 12 | 2.5 | 8.2 | 8.2 | .86 | 958 | 6.1 | 30 | 1110 | .04 | 7.0 | 11 | .00 |
| 13 | 2.5 | 8.2 | 8.2 | 1.1 | 1070 | .36 | 270 | 797 | .02 | 7.0 | 11 | .00 |
| 14 | 2.5 | 8.2 | 8.2 | 1.1 | 1050 | .08 | 49 | 301 | .01 | 7.0 | 11 | .00 |
| 15 | 4.5 | 8.2 | 8.2 | 1.1 | 813 | .01 | 618 | 800 | .01 | 7.0 | 11 | .00 |
| 16 | 4.9 | 8.4 | 8.2 | 1.3 | 130 | .04 | 1580 | 496 | .00 | 7.6 | 11 | .00 |
| 17 | 4.9 | 8.5 | 8.2 | 1.4 | 64 | 1.4 | 1720 | 26 | .00 | 7.6 | 11 | .00 |
| 18 | 4.7 | 8.8 | 7.7 | 1.4 | 31 | .23 | 1570 | 18 | .00 | 7.8 | 11 | .00 |
| 19 | 4.7 | 8.9 | 1.3 | 1.4 | 2.0 | .07 | 1390 | 16 | .00 | 8.0 | 11 | .00 |
| 20 | 4.7 | 8.8 | 2.9 | 1.8 | 1.5 | .07 | 1370 | 809 | .00 | 8.0 | 11 | .00 |
| 21 | 4.7 | 9.6 | 1.6 | 2.2 | 1.0 | .07 | 1350 | 1560 | .00 | 9.1 | 11 | .00 |
| 22 | 6.0 | 9.5 | 56 | 191 | 1.0 | .05 | 1330 | 1660 | .00 | 9.8 | 11 | .00 |
| 23 | 6.5 | 9.5 | 220 | 18 | 1.0 | .05 | 1310 | 1800 | .00 | 9.8 | 11 | .00 |
| 24 | 6.5 | 9.3 | 37 | 6.3 | 1.0 | .05 | 762 | 1770 | .00 | 10 | 11 | .00 |
| 25 | 6.2 | 9.2 | 5.1 | 713 | 1.0 | .05 | 855 | 1740 | .00 | 10 | 11 | .00 |
| 26 | 6.2 | 9.1 | 2.8 | 1480 | .90 | .07 | 55 | 1720 | .05 | 10 | 11 | .00 |
| 27 | 6.2 | 9.1 | 110 | 1400 | .90 | 23 | 24 | 1560 | .00 | 10 | 11 | .00 |
| 28 | 6.2 | 9.1 | 192 | 1380 | .90 | 272 | 964 | 1390 | .00 | 10 | 11 | .00 |
| 29 | 6.2 | 9.1 | 195 | 1350 | .90 | 1100 | 1940 | 1370 | 1.0 | 10 | 11 | .05 |
| 30 | 8.0 | 9.1 | 194 | 1320 | --- | 630 | 1760 | 1040 | 5.8 | 10 | 11 | .29 |
| 31 | 8.7 | --- | 191 | 746 | --- | 175 | --- | 683 | --- | 10 | 11 | --- |
| TOTAL | 136.1 | 257.8 | 1361.7 | 9264.86 | 5195.00 | 2216.10 | 20204.77 | 30368.2 | 2017.52 | 251.7 | 332 | 86.03 |
| MEAN | 4.39 | 8.59 | 43.9 | 299 | 179 | 71.5 | 673 | 980 | 67.3 | 8.12 | 10.7 | 2.87 |
| MAX | 8.7 | 9.6 | 220 | 1480 | 1070 | 1100 | 1940 | 1800 | 671 | 10 | 11 | 11 |
| MIN | 2.5 | 8.0 | 1.3 | .86 | .90 | .01 | .53 | 7.2 | .00 | 6.0 | 10 | .00 |
| AC-FT | 270 | 511 | 2700 | 18380 | 10300 | 4400 | 40080 | 60240 | 4000 | 499 | 659 | 171 |

CAL YR 1979 TOTAL 45246.82 MEAN 124 MAX 1650 MIN .17 AC-FT 89750
WTR YR 1980 TOTAL 71691.78 MEAN 196 MAX 1940 MIN .00 AC-FT 142200

## 08063500 RICHLAND CREEK NEAR RICHLAND, TX

**LOCATION.**--Lat 31°57'02", long 96°25'16", Navarro County, Hydrologic Unit 12030108, at left end of downstream bridge on U.S. Highway 75 (Interstate Highway 45), 800 ft (240 m) downstream from Texas and New Orleans Railroad Co. bridge, 1.0 mi (1.6 km) north of Richland, 3.5 mi (5.6 km) downstream from Pin Oak Creek, and 36.7 mi (59.1 km) upstream from mouth.

**DRAINAGE AREA.**--734 mi² (1,901 km²).

**PERIOD OF RECORD.**--December 1924 to February 1925 (discharge measurements and gage heights only). March 1939 to current year.

**REVISED RECORDS.**--WSP 1922: Drainage area.

**GAGE.**--Water-stage recorder. Datum of gage is 299.12 ft (91.172 m) National Geodetic Vertical Datum of 1929. Dec. 11, 1924, to Feb. 11, 1925, nonrecording gage at site 800 ft (240 m) upstream. Mar. 17, 1939, to Feb. 14, 1958, water-stage recorder at site 50 ft (15 m) upstream. Feb. 15, 1958, to Jan. 28, 1959, nonrecording gage at present site. June 8, 1955, to Feb. 14, 1958, and since Feb. 6, 1959, supplementary water-stage recorder in overflow channel 3,900 ft (1,190 m) to right of main channel gage. All gages at present datum.

**REMARKS.**--Records good except those below 200 ft³/s (5.66 m³/s), which are fair. Since October 1962, flow is partly regulated by Navarro Mills Lake (station 08063050) located 25 mi (40 km) upstream. Flow is also affected at times by discharge from the flood-detention pools of 73 floodwater-retarding structures with combined detention capacity of 42,060 acre-ft (51.9 hm³). These structures control runoff from 143 mi² (370 km²) in the Richland Creek drainage basin. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--23 years (water years 1940-62) prior to regulation by Navarro Mills Lake, 404 ft³/s (11.44 m³/s), 292,700 acre-ft/yr (361 hm³/yr); 18 years (water years 1963-80) regulated, 352 ft³/s (9.969 m³/s), 255,000 acre-ft/yr (314 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 58,900 ft³/s (1,670 m³/s) May 12, 1948, gage height, 24.16 ft (7.364 m); no flow at times.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since at least 1899, 25.5 ft (7.77 m) in December 1913 (discharge not determined), from information by Texas and New Orleans Railroad Co.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 9,260 ft³/s (262 m³/s) May 17 at 0830 hours, gage height, 21.81 ft (6.648 m); maximum gage height at main channel, 21.82 ft (6.651 m) May 17, from stage graph; no flow Sept. 13-30.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8.2 | 16 | 16 | 279 | 611 | 53 | 210 | 1930 | 712 | 1.4 | 12 | 12 |
| 2 | 7.2 | 24 | 24 | 237 | 331 | 48 | 45 | 1700 | 697 | 2.0 | 12 | 9.0 |
| 3 | 7.2 | 18 | 13 | 219 | 321 | 43 | 46 | 1600 | 677 | 7.3 | 11 | 8.6 |
| 4 | 5.5 | 15 | 12 | 212 | 314 | 40 | 55 | 1550 | 401 | 7.5 | 11 | 9.0 |
| 5 | 5.1 | 12 | 12 | 93 | 220 | 34 | 35 | 1500 | 168 | 7.2 | 10 | 9.1 |
| 6 | 5.7 | 9.3 | 11 | 27 | 109 | 29 | 27 | 1400 | 34 | 7.2 | 10 | 9.3 |
| 7 | 7.1 | 9.0 | 11 | 20 | 98 | 24 | 25 | 1200 | 25 | 7.5 | 10 | 8.8 |
| 8 | 7.3 | 9.7 | 11 | 22 | 352 | 19 | 145 | 1000 | 23 | 7.5 | 10 | 9.3 |
| 9 | 6.8 | 10 | 11 | 20 | 1320 | 15 | 318 | 900 | 22 | 7.5 | 10 | 9.5 |
| 10 | 5.9 | 9.0 | 12 | 11 | 1470 | 10 | 320 | 700 | 18 | 7.5 | 11 | 7.6 |
| 11 | 5.9 | 9.1 | 12 | 7.1 | 1120 | 5.8 | 330 | 520 | 16 | 7.3 | 11 | 2.7 |
| 12 | 6.7 | 9.6 | 16 | 5.0 | 1140 | 14 | 610 | 460 | 16 | 7.2 | 11 | .08 |
| 13 | 7.3 | 9.8 | 60 | 3.7 | 1350 | 55 | 912 | 1000 | 15 | 7.3 | 11 | .00 |
| 14 | 13 | 9.3 | 64 | 3.0 | 1430 | 34 | 2740 | 1200 | 12 | 7.4 | 11 | .00 |
| 15 | 7.8 | 9.7 | 30 | 2.8 | 1380 | 19 | 2500 | 1460 | 10 | 7.6 | 11 | .00 |
| 16 | 6.9 | 10 | 20 | 2.3 | 726 | 11 | 1810 | 5070 | 10 | 7.7 | 11 | .00 |
| 17 | 9.7 | 15 | 15 | 1.7 | 264 | 11 | 1820 | 8580 | 9.1 | 8.0 | 11 | .00 |
| 18 | 8.4 | 11 | 11 | 1.7 | 203 | 29 | 1770 | 4240 | 7.8 | 8.3 | 10 | .00 |
| 19 | 6.7 | 9.5 | 9.5 | 1.5 | 147 | 22 | 1500 | 1130 | 6.5 | 8.5 | 10 | .00 |
| 20 | 6.6 | 8.9 | 9.2 | 5.6 | 104 | 17 | 1360 | 830 | 6.9 | 8.5 | 9.0 | .00 |
| 21 | 9.8 | 9.3 | 7.6 | 75 | 98 | 12 | 1320 | 1950 | 5.9 | 9.6 | 7.5 | .00 |
| 22 | 8.1 | 7.8 | 290 | 833 | 92 | 8.6 | 1290 | 1960 | 5.4 | 9.9 | 7.3 | .00 |
| 23 | 7.3 | 9.4 | 813 | 1810 | 86 | 6.3 | 1260 | 2060 | 5.9 | 10 | 7.6 | .00 |
| 24 | 8.4 | 9.5 | 1290 | 1570 | 84 | 4.6 | 1210 | 2050 | 5.1 | 11 | 7.8 | .00 |
| 25 | 12 | 11 | 1030 | 791 | 80 | 4.0 | 1780 | 1940 | 4.0 | 11 | 7.4 | .00 |
| 26 | 8.3 | 11 | 515 | 1360 | 77 | 3.8 | 4150 | 1850 | 3.3 | 10 | 7.2 | .00 |
| 27 | 7.7 | 10 | 280 | 1750 | 70 | 5.9 | 2540 | 1770 | 3.0 | 12 | 5.3 | .00 |
| 28 | 7.5 | 9.3 | 295 | 1530 | 63 | 421 | 861 | 1480 | 2.4 | 13 | 5.9 | .00 |
| 29 | 7.8 | 9.3 | 366 | 1320 | 58 | 929 | 1900 | 1350 | 2.0 | 15 | 6.9 | .00 |
| 30 | 13 | 9.6 | 543 | 1260 | --- | 1340 | 2170 | 1320 | 1.7 | 16 | 9.0 | .00 |
| 31 | 15 | --- | 366 | 1210 | --- | 750 | --- | 834 | --- | 13 | 10 | --- |
| TOTAL | 249.9 | 330.1 | 6175.3 | 14683.4 | 13718 | 4018.0 | 35059 | 56534 | 2925.0 | 270.9 | 294.9 | 94.98 |
| MEAN | 8.06 | 11.0 | 199 | 474 | 473 | 130 | 1169 | 1824 | 97.5 | 8.74 | 9.51 | 3.17 |
| MAX | 15 | 24 | 1290 | 1810 | 1470 | 1340 | 4150 | 8580 | 712 | 16 | 12 | 12 |
| MIN | 5.1 | 7.8 | 7.6 | 1.5 | 58 | 3.8 | 25 | 460 | 1.7 | 1.4 | 5.3 | .00 |
| AC-FT | 496 | 655 | 12250 | 29120 | 27210 | 7970 | 69540 | 112100 | 5800 | 537 | 585 | 188 |

CAL YR 1979 TOTAL 143212.15 MEAN 392 MAX 13700 MIN .96 AC-FT 284100
WTR YR 1980 TOTAL 134353.48 MEAN 367 MAX 8580 MIN .00 AC-FT 266500

## 08063700 BARDWELL LAKE NEAR ENNIS, TX

LOCATION.--Lat 32°15'00", long 96°38'49", Ellis County, Hydrologic Unit 12030109, in intake structure of Bardwell Dam on Waxahachie Creek, 5 mi (8 km) south of Ennis, and 5.6 mi (9.0 km) upstream from mouth.

DRAINAGE AREA.--178 mi² (461 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1965 to current year. Prior to October 1970, published as Bardwell Reservoir.
Water Quality records: Chemical analyses: October 1969 to September 1978.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Apr. 25, 1966, nonrecording gage on intake structure at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam 15,400 ft (4,690 m) long, including a 350-foot (107 m) uncontrolled off-channel concrete-gravity spillway with ogee weir section. Deliberate impoundment began Nov. 20, 1965, and the dam was completed Mar. 27, 1966. The controlled low-flow outlet works consists of a 10.0-foot-diameter (3.0 m) concrete conduit with two 5.0- by 10.0-foot (1.5 by 3.0 m) sluice gates. The lake was built for flood control and water conservation. The capacity table beginning October 1976 is based on a survey completed in 1972. Flow from 81.4 mi² (210.8 km²) above this lake is modified by Lake Waxahachie, with a capacity of 13,500 acre-ft (16.6 hm³), at spillway elevation. During the current year, the city of Waxahachie diverted 2,800 acre-ft (3.45 hm³) from Lake Waxahachie and returned 2,070 acre-ft (2.55 hm³) to Waxahachie Creek. Inflow is affected at times by discharge from the flood-detention pools of 23 floodwater-retarding structures with combined detention capacity of 15,370 acre-ft (19.0 hm³). These structures control runoff from 52.4 mi² (135.7 km²) in the Chambers Creek watershed. Corps of Engineers gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 460.0 | - |
| Design flood | 455.9 | - |
| Crest of spillway (top of flood-control pool) | 439.0 | 137,600 |
| Top of conservation pool | 421.0 | 52,300 |
| Lowest gated outlet (invert) | 391.0 | 690 |

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 103,300 acre-ft (127 hm³) May 19, 1969, elevation, 432.35 ft (131.780 m); minimum since initial filling, 39,720 acre-ft (49.0 hm³) Nov. 10, 1978, elevation, 417.21 ft (127.166 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 62,220 acre-ft (76.7 hm³) May 20 at 0930 hours, elevation, 423.66 ft (129.132 m); minimum, 42,220 acre-ft (52.1 hm³) Sept. 24 at 2100 hours, elevation, 418.33 ft (127.507 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 418.0 | 42,170 | 422.0 | 55,920 |
| 420.0 | 48,780 | 424.0 | 63,550 |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 51230 | 50450 | 49820 | 51330 | 52220 | 52360 | 53110 | 52330 | 52180 | 50310 | 47470 | 44670 |
| 2 | 51090 | 50350 | 49750 | 51330 | 52220 | 52330 | 53290 | 52760 | 52180 | 50210 | 47370 | 44570 |
| 3 | 51050 | 50350 | 49720 | 51330 | 52290 | 52260 | 53360 | 52860 | 52150 | 50100 | 47240 | 44340 |
| 4 | 50950 | 50240 | 49720 | 51330 | 52290 | 52540 | 53360 | 52930 | 52110 | 50000 | 47070 | 44470 |
| 5 | 50880 | 50240 | 49650 | 51330 | 52400 | 52400 | 53330 | 53010 | 52110 | 49890 | 46930 | 44380 |
| 6 | 50840 | 50210 | 49680 | 51260 | 52400 | 52400 | 53330 | 53110 | 52040 | 49820 | 46900 | 44340 |
| 7 | 50630 | 50100 | 49650 | 51300 | 52400 | 52470 | 53360 | 53220 | 52040 | 49720 | 46830 | 44340 |
| 8 | 50740 | 50100 | 49650 | 51260 | 53110 | 52540 | 52970 | 53290 | 52040 | 49580 | 46730 | 44340 |
| 9 | 50700 | 50350 | 49650 | 51230 | 53470 | 52580 | 52580 | 53180 | 52010 | 49510 | 46660 | 44340 |
| 10 | 50520 | 50280 | 49610 | 51260 | 53540 | 52580 | 52180 | 52860 | 51940 | 49400 | 46560 | 44310 |
| 11 | 50420 | 50170 | 49820 | 51300 | 53510 | 52580 | 52540 | 52760 | 51860 | 49260 | 46490 | 44210 |
| 12 | 50380 | 50210 | 49860 | 51190 | 53010 | 52830 | 52900 | 52580 | 51790 | 49200 | 46460 | 44150 |
| 13 | 50310 | 50140 | 49790 | 51190 | 52470 | 52830 | 54670 | 52540 | 51690 | 49060 | 46460 | 44050 |
| 14 | 49960 | 50140 | 49720 | 51190 | 52260 | 52720 | 55080 | 52860 | 51580 | 48950 | 46290 | 44020 |
| 15 | 50520 | 50100 | 49720 | 51230 | 52650 | 52290 | 54640 | 56290 | 51480 | 48810 | 46090 | 43990 |
| 16 | 50490 | 50070 | 49720 | 51330 | 52610 | 52720 | 53440 | 59600 | 51440 | 48710 | 45990 | 43860 |
| 17 | 50520 | 50070 | 49650 | 51330 | 52610 | 52580 | 52540 | 60640 | 51400 | 48610 | 45920 | 43790 |
| 18 | 50450 | 50070 | 49580 | 51330 | 52720 | 52540 | 52220 | 61520 | 51300 | 48500 | 45820 | 43660 |
| 19 | 50380 | 50070 | 49580 | 51480 | 52790 | 52540 | 52220 | 62020 | 51230 | 48430 | 45720 | 43540 |
| 20 | 50350 | 50240 | 49580 | 51620 | 52900 | 52580 | 52290 | 61020 | 51300 | 48330 | 45660 | 43470 |
| 21 | 50350 | 50310 | 49890 | 51970 | 53010 | 52580 | 52290 | 58690 | 51260 | 48300 | 45520 | 43440 |
| 22 | 50420 | 50170 | 49960 | 54740 | 52970 | 52470 | 52330 | 57040 | 51190 | 48190 | 45460 | 43310 |
| 23 | 50310 | 50070 | 50310 | 55180 | 52900 | 52830 | 52330 | 55850 | 51160 | 48090 | 45390 | 43280 |
| 24 | 50240 | 50070 | 51160 | 55370 | 52760 | 52580 | 52580 | 54710 | 51050 | 47990 | 45290 | 43340 |
| 25 | 50210 | 50070 | 51160 | 55150 | 52580 | 52500 | 53260 | 53540 | 50950 | 47920 | 45230 | 43440 |
| 26 | 50100 | 50000 | 51190 | 54120 | 52360 | 52540 | 53290 | 52580 | 50910 | 47820 | 45130 | 43540 |
| 27 | 50100 | 50070 | 51230 | 52760 | 52330 | 52860 | 53290 | 52150 | 50770 | 47950 | 45000 | 43570 |
| 28 | 50070 | 49930 | 51370 | 52110 | 52360 | 52970 | 53260 | 52220 | 50660 | 47920 | 45030 | 43570 |
| 29 | 49930 | 49930 | 51400 | 52110 | 52360 | 53110 | 52970 | 52220 | 50560 | 47780 | 44960 | 43730 |
| 30 | 50450 | 49820 | 51400 | 52330 | --- | 53110 | 52580 | 52220 | 50450 | 47710 | 44900 | 43860 |
| 31 | 50450 | --- | 51330 | 52220 | --- | 53010 | --- | 52220 | --- | 47580 | 44800 | --- |
| MAX | 51230 | 50450 | 51400 | 55370 | 53540 | 53110 | 55080 | 62020 | 52180 | 50310 | 47470 | 44670 |
| MIN | 49930 | 49820 | 49580 | 51190 | 52220 | 52260 | 52180 | 52150 | 50450 | 47580 | 44800 | 43280 |
| (†) | 420.48 | 420.30 | 420.73 | 420.98 | 421.02 | 421.20 | 421.08 | 420.98 | 420.48 | 419.65 | 418.82 | 418.53 |
| (‡) | -850 | -630 | +1510 | +890 | +140 | +650 | -430 | -360 | -1770 | -2870 | -2780 | -940 |
| (††) | 178 | 148 | 143 | 129 | 125 | 140 | 146 | 142 | 191 | 280 | 296 | 234 |

CAL YR 1979 MAX 70010 MIN 40830 ‡ -10250 †† 1920
WTR YR 1980 MAX 62020 MIN 43280 ‡ -7440 †† 2150

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal use by city of Ennis.

### 08063700 BARDWELL LAKE NEAR ENNIS, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

### 321506096382601 BARDWELL LAKE SITE AC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | | |
| 24... | 1010 | 1.0 | 304 | 8.2 | 10.0 | .60 | 10.7 | 96 | 110 | 1 |
| 24... | 1012 | 10 | 304 | 8.2 | 10.0 | -- | 10.6 | 95 | -- | -- |
| 24... | 1014 | 20 | 304 | 8.2 | 10.0 | -- | 10.4 | 93 | -- | -- |
| 24... | 1016 | 30 | 304 | 8.2 | 10.0 | -- | 10.4 | 93 | -- | -- |
| 24... | 1018 | 40 | 304 | 8.1 | 10.0 | -- | 10.2 | 91 | 110 | 1 |
| MAY | | | | | | | | | | |
| 07... | 0845 | 1.0 | 316 | 7.3 | 20.5 | 1.16 | 7.7 | 86 | 120 | 15 |
| 07... | 0847 | 10 | 316 | 7.3 | 20.5 | -- | 7.6 | 84 | -- | -- |
| 07... | 0849 | 20 | 318 | 7.1 | 20.0 | -- | 6.8 | 76 | -- | -- |
| 07... | 0851 | 30 | 325 | 6.8 | 19.0 | -- | 4.8 | 52 | -- | -- |
| 07... | 0853 | 43 | 342 | 6.5 | 16.5 | -- | 1.0 | 10 | 130 | 1 |
| AUG | | | | | | | | | | |
| 27... | 0930 | 1.0 | 289 | 7.7 | 28.0 | .91 | 7.1 | 90 | 99 | 9 |
| 27... | 0932 | 10 | 289 | 7.7 | 28.0 | -- | 6.6 | 84 | -- | -- |
| 27... | 0934 | 20 | 293 | 7.3 | 27.5 | -- | 4.5 | 56 | -- | -- |
| 27... | 0936 | 25 | 293 | 7.2 | 27.5 | -- | 3.8 | 48 | -- | -- |
| 27... | 0938 | 29 | 298 | 7.0 | 27.5 | -- | 2.0 | 25 | 100 | 3 |

| DATE | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | 39 | 2.6 | 16 | .7 | 3.5 | 130 | 0 | 26 | 13 |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | 39 | 2.5 | 17 | .7 | 3.5 | 130 | 0 | 28 | 13 |
| MAY | | | | | | | | | |
| 07... | 44 | 2.8 | 17 | .7 | 3.5 | 130 | 0 | 28 | 13 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | 48 | 3.1 | 17 | .6 | 3.5 | 160 | 0 | 27 | 14 |
| AUG | | | | | | | | | |
| 27... | 35 | 2.8 | 19 | .8 | 4.3 | 110 | 0 | 28 | 16 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | 36 | 2.8 | 19 | .8 | 4.1 | 120 | 0 | 28 | 18 |

| DATE | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | .3 | 1.4 | 166 | .17 | .37 | .54 | .030 | <10 | <1 |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | -- | -- | .16 | .40 | .56 | .040 | 10 | 0 |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | -- | 1.5 | 169 | .17 | .52 | .69 | .130 | <10 | 1 |
| MAY | | | | | | | | | |
| 07... | .4 | .6 | 173 | .27 | .78 | 1.1 | .030 | <10 | 2 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | -- | -- | -- | .28 | .60 | .88 | .030 | 20 | 10 |
| 07... | -- | -- | -- | .28 | .81 | 1.1 | .040 | 10 | 60 |
| 07... | -- | 3.8 | 196 | .25 | 1.2 | 1.5 | .060 | <10 | 450 |
| AUG | | | | | | | | | |
| 27... | .4 | 3.4 | 163 | .00 | .95 | .95 | .110 | <10 | <1 |
| 27... | -- | -- | -- | .00 | .88 | .88 | .120 | 20 | 0 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | -- | 3.8 | 171 | .08 | .89 | .97 | .140 | 50 | 9 |

BARDWELL LAKE NEAR ENNIS, TX--Continued

321704096393501 BARDWELL LAKE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | 0940 | 1.0 | 303 | 8.2 | 10.0 | .50 | 10.5 | 94 | 110 |
| 24... | 0942 | 10 | 303 | 8.1 | 9.5 | -- | 10.4 | 92 | -- |
| 24... | 0945 | 21 | 303 | 8.1 | 9.5 | -- | 10.4 | 92 | 110 |
| MAY | | | | | | | | | |
| 07... | 0910 | 1.0 | 311 | 7.3 | 21.5 | .82 | 8.1 | 92 | 120 |
| 07... | 0915 | 10 | 311 | 7.4 | 21.5 | -- | 8.2 | 93 | -- |
| 07... | 0921 | 21 | 311 | 7.4 | 21.5 | -- | 8.1 | 92 | 120 |
| AUG | | | | | | | | | |
| 27... | 1010 | 1.0 | 276 | 7.8 | 29.0 | .61 | 7.5 | 96 | 91 |
| 27... | 1012 | 10 | 276 | 7.8 | 29.0 | -- | 7.4 | 95 | -- |
| 27... | 1014 | 19 | 282 | 7.7 | 29.0 | -- | 7.2 | 92 | 94 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | 4 | 40 | 2.5 | 16 | .7 | 3.5 | 130 | 0 | 28 |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | 4 | 40 | 2.7 | 17 | .7 | 3.5 | 130 | 0 | 27 |
| MAY | | | | | | | | | |
| 07... | 12 | 43 | 2.8 | 17 | .7 | 3.5 | 130 | 0 | 30 |
| 07... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 07... | 13 | 43 | 3.0 | 17 | .7 | 3.4 | 130 | 0 | 29 |
| AUG | | | | | | | | | |
| 27... | 9 | 32 | 2.8 | 19 | .9 | 4.2 | 100 | 0 | 28 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 27... | 4 | 33 | 2.8 | 19 | .9 | 4.3 | 110 | 0 | 29 |

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | 12 | 1.6 | 168 | .31 | .38 | .69 | .040 | <10 | <1 |
| 24... | -- | -- | -- | .38 | .29 | .67 | .040 | 0 | 0 |
| 24... | 14 | 1.7 | 170 | .38 | .37 | .75 | .040 | <10 | 1 |
| MAY | | | | | | | | | |
| 07... | 14 | .7 | 175 | .23 | .63 | .86 | .040 | 40 | 3 |
| 07... | -- | -- | -- | .24 | .66 | .90 | .030 | 30 | 0 |
| 07... | 14 | .5 | 174 | .24 | .74 | .98 | .030 | <10 | 2 |
| AUG | | | | | | | | | |
| 27... | 16 | 3.5 | 155 | .00 | 1.1 | 1.1 | .130 | <10 | <1 |
| 27... | -- | -- | -- | .00 | .85 | .85 | .150 | 30 | 0 |
| 27... | 17 | 3.4 | 163 | .00 | 1.0 | 1.0 | .150 | <10 | <1 |

### BARDWELL LAKE NEAR ENNIS, TX--Continued

### 321830096404001 BARDWELL LAKE SITE CC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 24... | 1045 | 1.0 | 268 | 8.0 | 9.0 | .20 | 10.1 |
| 24... | 1050 | 4.0 | 268 | 8.0 | 9.0 | -- | 10.1 |
| MAY | | | | | | | |
| 07... | 0944 | 1.0 | 300 | 7.3 | 23.5 | .43 | 7.8 |
| 07... | 0951 | 6.0 | 300 | 7.3 | 23.5 | -- | 7.8 |
| AUG | | | | | | | |
| 27... | 1040 | 1.0 | 276 | 7.9 | 28.5 | .30 | 7.2 |
| 27... | 1042 | 3.0 | 276 | 7.9 | 29.0 | -- | 7.2 |

| DATE | OXYGEN, DISSOLVED (PERCENT SATURATION) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 24... | 89 | 2.4 | -- | -- | .160 | 50 | 0 |
| 24... | 89 | 2.3 | -- | -- | .160 | 10 | 0 |
| MAY | | | | | | | |
| 07... | 93 | .13 | .69 | .82 | .050 | 20 | 10 |
| 07... | 93 | .11 | .68 | .79 | .050 | 20 | 10 |
| AUG | | | | | | | |
| 27... | 92 | .00 | 1.0 | 1.0 | .150 | 10 | 0 |
| 27... | 92 | .00 | .87 | .87 | .280 | 10 | 0 |

### 321758096412901 BARDWELL LAKE SITE DC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | 1100 | 1.0 | 300 | 8.1 | 9.5 | .20 | 10.4 | 92 | 110 |
| 24... | 1105 | 7.0 | 300 | 8.1 | 9.5 | -- | 10.3 | 91 | 110 |
| MAY | | | | | | | | | |
| 07... | 0930 | 1.0 | 300 | 7.2 | 22.5 | .37 | 8.2 | 95 | 110 |
| 07... | 0937 | 8.0 | 300 | 7.2 | 22.5 | -- | 8.2 | 95 | 110 |
| AUG | | | | | | | | | |
| 27... | 1103 | 1.0 | 278 | 7.8 | 30.5 | .30 | 7.0 | 92 | 91 |
| 27... | 1105 | 6.0 | 278 | 7.7 | 30.0 | -- | 6.7 | 88 | 91 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | 8 | 39 | 2.3 | 14 | .6 | 3.6 | 120 | 0 | 28 |
| 24... | 3 | 40 | 2.4 | 15 | .6 | 3.6 | 130 | 0 | 27 |
| MAY | | | | | | | | | |
| 07... | 15 | 41 | 2.8 | 17 | .7 | 3.5 | 120 | 0 | 29 |
| 07... | 8 | 41 | 3.0 | 17 | .7 | 3.5 | 130 | 0 | 29 |
| AUG | | | | | | | | | |
| 27... | 9 | 32 | 2.7 | 15 | .7 | 4.0 | 100 | 0 | 27 |
| 27... | 9 | 32 | 2.7 | 16 | .7 | 4.2 | 100 | 0 | 29 |

### 321758096412901 BARDWELL LAKE SITE DC--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO-GEN, TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | IRON, DIS-SOLVED (UG/L AS FE) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 24... | 11 | 3.0 | 160 | 1.1 | .41 | 1.5 | .100 | 10 | <1 |
| 24... | 11 | 3.3 | 166 | 1.2 | .54 | 1.7 | .130 | 20 | 1 |
| MAY | | | | | | | | | |
| 07... | 14 | 1.2 | 168 | .11 | .76 | .87 | .060 | 140 | 20 |
| 07... | 13 | .9 | 172 | .14 | .70 | .84 | .050 | 70 | 10 |
| AUG | | | | | | | | | |
| 27... | 16 | 3.6 | 150 | .00 | .97 | .97 | .170 | <10 | <1 |
| 27... | 17 | 3.7 | 154 | .00 | 1.2 | 1.2 | .180 | <10 | <1 |

## TRINITY RIVER BASIN

## BARDWELL LAKE NEAR ENNIS, TX--Continued

### 321506096382601 BARDWELL LAKE SITE AC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| | | | |
|---|---|---|---|
| DATE | JAN 24,80 | MAY 7,80 | AUG 27,80 |
| TIME | 1011 | 0846 | 0931 |
| TOTAL CELLS/ML | 34000 | 3600 | 370000 |
| DIVERSITY: DIVISION | 0.9 | 1.6 | 0.1 |
| .CLASS | 0.9 | 1.6 | 0.1 |
| ..ORDER | 0.9 | 2.1 | 0.7 |
| ...FAMILY | 0.9 | 2.8 | 1.0 |
| ....GENUS | 1.0 | 3.1 | 1.8 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | -- | - | 26 | 1 | -- | - |
| ...COELASTRACEAE | | | | | | |
| ....COELASTRUM | -- | - | 770# | 21 | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 8100# | 24 | 300 | 8 | * | 0 |
| ....CHLORELLA | 970 | 3 | 64 | 2 | -- | - |
| ....DICTYOSPHAERIUM | -- | - | -- | - | * | 0 |
| ....KIRCHNERIELLA | 320 | 1 | -- | - | -- | - |
| ....OOCYSTIS | -- | - | * | 0 | -- | - |
| ....SELENASTRUM | -- | - | 64 | 2 | * | 0 |
| ....TETRAEDRON | -- | - | -- | - | * | 0 |
| ...SCENEDESMACEAE | | | | | | |
| ....SCENEDESMUS | -- | - | 100 | 3 | * | 0 |
| ....TETRASTRUM | -- | - | 210 | 6 | -- | - |
| ..TETRASPORALES | | | | | | |
| ...COCCOMYXACEAE | | | | | | |
| ....ELAKATOTHRIX | -- | - | 26 | 1 | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | 26 | 1 | -- | - |
| ..ZYGNEMATALES | | | | | | |
| ...DESMIDIACEAE | | | | | | |
| ....COSMARIUM | -- | - | -- | - | * | 0 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 25000# | 72 | 360 | 10 | * | 0 |
| ..PENNALES | | | | | | |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | -- | - | -- | - | * | 0 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | | | |
| ....CHROOMONAS | -- | - | 170 | 5 | -- | - |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | -- | - | * | 0 | * | 0 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | -- | - | -- | - | 16000 | 4 |
| ....ANACYSTIS | -- | - | 760# | 21 | 41000 | 11 |
| ....COCCOCHLORIS | -- | - | 64 | 2 | -- | - |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENOPSIS | -- | - | -- | - | 20000 | 5 |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | -- | - | 200000# | 54 |
| ....OSCILLATORIA | -- | - | 640# | 18 | 87000# | 24 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

TRINITY RIVER BASIN

BARDWELL LAKE NEAR ENNIS, TX--Continued

321758096412901 BARDWELL LAKE SITE DC

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

| DATE | JAN 24,80 | MAY 7,80 | AUG 27,80 |
|---|---|---|---|
| TIME | 1101 | 0933 | 1102 |
| TOTAL CELLS/ML | 15000 | 9000 | 130000 |
| DIVERSITY: DIVISION | 0.9 | 1.9 | 0.3 |
| .CLASS | 0.9 | 1.9 | 0.3 |
| ..ORDER | 1.3 | 2.6 | 0.6 |
| ...FAMILY | 1.3 | 3.1 | 1.0 |
| ....GENUS | 1.8 | 3.5 | 1.8 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | -- | - | * | 0 | -- | - |
| ...MICRACTINIACEAE | | | | | | |
| ....GOLENKINIA | -- | - | -- | - | * | 0 |
| ....MICRACTINIUM | -- | - | 270 | 3 | -- | - |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 4400# | 29 | 270 | 3 | 930 | 1 |
| ....CHLORELLA | 120 | 1 | 130 | 1 | -- | - |
| ....DICTYOSPHAERIUM | -- | - | 130 | 1 | * | 0 |
| ....OOCYSTIS | -- | - | 100 | 1 | * | 0 |
| ....SELENASTRUM | -- | - | 200 | 2 | -- | - |
| ....TETRAEDRON | -- | - | -- | - | * | 0 |
| ...SCENEDESMACEAE | | | | | | |
| ....CRUCIGENIA | -- | - | -- | - | * | 0 |
| ....SCENEDESMUS | -- | - | 200 | 2 | * | 0 |
| ....TETRASTRUM | -- | - | 270 | 3 | -- | - |
| ..TETRASPORALES | | | | | | |
| ...PALMELLACEAE | | | | | | |
| ....SPHAEROCYSTIS | 970 | 7 | -- | - | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | -- | - | * | 0 | * | 0 |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 7200# | 48 | 940 | 10 | * | 0 |
| ....MELOSIRA | 2100 | 14 | -- | - | -- | - |
| ..PENNALES | | | | | | |
| ...FRAGILARIACEAE | | | | | | |
| ....SYNEDRA | -- | - | -- | - | * | 0 |
| ...NAVICULACEAE | | | | | | |
| ....NAVICULA | -- | - | 300 | 3 | 930 | 1 |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 240 | 2 | 810 | 9 | * | 0 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | -- | - | 300 | 3 | -- | - |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | -- | - | -- | - | 800 | 1 |
| ....ANACYSTIS | -- | - | 2800# | 31 | 4900 | 4 |
| ....COCCOCHLORIS | -- | - | 130 | 1 | -- | - |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENA | -- | - | 540 | 6 | -- | - |
| ....ANABAENOPSIS | -- | - | -- | - | 9300 | 7 |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | -- | - | 47000# | 35 |
| ....OSCILLATORIA | -- | - | 810 | 9 | 67000# | 50 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....EUGLENA | -- | - | 670 | 7 | * | 0 |
| ....TRACHELOMONAS | -- | - | 100 | 1 | * | 0 |
| PYRRHOPHYTA (FIRE ALGAE) | | | | | | |
| .DINOPHYCEAE | | | | | | |
| ..PERIDINIALES | | | | | | |
| ...GLENODINIACEAE | | | | | | |
| ....GLENODINIUM | -- | - | -- | - | * | 0 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 08063800 WAXAHACHIE CREEK NEAR BARDWELL, TX

LOCATION.--Lat 32°14'36", long 96°38'24", Ellis County, Hydrologic Unit 12030109, on right bank 0.8 mi (1.3 km) downstream from Bardwell Dam, 3.6 mi (5.8 km) southeast of Bardwell, 3.8 mi (6.1 km) downstream from bridge on State Highway 34, and 4.1 mi (6.6 km) upstream from mouth.

DRAINAGE AREA.--178 mi$^2$ (461 km$^2$).

PERIOD OF RECORD.--October 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 370.18 ft (112.831 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Records fair. Flow is regulated by Bardwell Lake (station 08063700) 0.8 mi (1.3 km) upstream. Several observations of water temperature were made during the year. Corps of Engineers gage-height telemeter at station.

AVERAGE DISCHARGE.--17 years, 75.9 ft$^3$/s (2.149 m$^3$/s), 54,990 acre-ft/yr (67.8 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,960 ft$^3$/s (83.8 m$^3$/s) Feb. 9, 1965, gage height, 17.55 ft (5.349 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1944, about 23 ft (7.0 m) in 1944 and 1945, from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,480 ft$^3$/s (41.9 m$^3$/s) May 20 at 2015 hours, gage height, 13.83 ft (4.215 m); minimum daily, 0.23 ft$^3$/s (0.007 m$^3$/s) Mar. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.2 | 1.8 | 2.0 | 1.8 | 5.5 | 1.3 | 1.5 | 81 | 3.0 | 2.1 | 1.9 | 1.5 |
| 2 | 1.1 | 1.8 | 1.9 | 1.9 | 5.0 | 1.2 | 1.5 | 6.4 | 2.9 | 2.1 | 2.1 | 1.5 |
| 3 | 1.1 | 1.8 | 1.9 | 1.8 | 4.7 | 1.1 | 1.3 | 6.1 | 2.8 | 2.1 | 2.4 | 1.5 |
| 4 | .99 | 1.8 | 1.9 | 1.8 | 4.2 | 1.1 | 1.4 | 5.8 | 2.7 | 2.3 | 2.1 | 1.5 |
| 5 | .96 | 1.8 | 1.9 | 1.8 | 4.0 | 1.1 | 1.4 | 5.8 | 2.7 | 1.7 | 2.1 | 1.5 |
| 6 | .96 | 1.9 | 2.0 | 1.9 | 3.7 | .92 | 1.5 | 5.7 | 2.8 | 2.4 | 2.5 | 1.5 |
| 7 | .90 | 1.9 | 2.0 | 1.9 | 3.6 | .95 | 50 | 5.5 | 2.7 | 2.1 | 2.6 | 1.5 |
| 8 | 1.0 | 2.0 | 2.0 | 1.9 | 3.8 | .92 | 134 | 5.1 | 2.9 | 2.0 | 2.5 | 1.3 |
| 9 | .91 | 2.1 | 1.9 | 1.9 | 4.0 | .88 | 135 | 46 | 3.2 | 1.6 | 2.4 | 1.1 |
| 10 | .78 | 2.5 | 2.0 | 1.8 | 3.6 | .70 | 103 | 72 | 2.9 | 1.2 | 2.3 | 1.2 |
| 11 | .87 | 2.5 | 2.3 | 1.9 | 136 | .26 | 3.6 | 71 | 3.0 | 2.2 | 1.9 | 1.1 |
| 12 | .95 | 2.5 | 2.4 | 1.8 | 326 | .23 | 3.3 | 70 | 2.8 | 2.7 | 1.7 | 1.1 |
| 13 | 1.1 | 2.5 | 2.3 | 1.9 | 320 | .55 | 4.3 | 41 | 2.9 | 2.7 | 1.8 | 1.1 |
| 14 | 1.2 | 2.5 | 2.3 | 1.9 | 153 | 38 | 4.0 | 5.7 | 3.0 | 2.5 | 1.8 | 1.1 |
| 15 | 1.3 | 2.5 | 2.3 | 2.0 | 4.3 | 127 | 242 | 9.3 | 2.9 | 2.5 | 1.9 | 1.1 |
| 16 | 1.2 | 2.5 | 2.2 | 2.0 | 3.6 | 53 | 518 | 57 | 2.7 | 2.6 | 1.9 | 2.1 |
| 17 | 1.2 | 2.5 | 2.2 | 2.0 | 3.1 | 2.2 | 416 | 18 | 2.7 | 2.4 | 1.9 | 3.0 |
| 18 | 1.2 | 2.5 | 2.3 | 2.1 | 3.0 | 1.8 | 114 | 4.8 | 2.8 | 2.4 | 1.8 | 3.0 |
| 19 | 1.2 | 2.5 | 2.4 | 2.3 | 3.0 | 1.8 | 3.1 | 4.9 | 2.7 | 2.2 | 1.7 | 3.0 |
| 20 | 1.2 | 2.5 | 2.5 | 4.5 | 2.7 | 1.8 | 2.7 | 783 | 2.9 | 2.3 | 1.7 | 2.8 |
| 21 | 1.4 | 2.7 | 2.7 | 2.9 | 1.6 | 1.7 | 2.5 | 1460 | 2.7 | 2.3 | 1.7 | 2.9 |
| 22 | 1.5 | 2.3 | 3.3 | 11 | 38 | 1.6 | 2.5 | 1030 | 2.6 | 2.1 | 1.6 | 2.4 |
| 23 | 1.3 | 2.3 | 4.9 | 2.8 | 61 | 1.5 | 2.5 | 661 | 2.4 | 1.9 | 1.5 | 1.9 |
| 24 | 1.3 | 2.3 | 2.1 | 2.4 | 61 | 1.4 | 3.2 | 654 | 2.5 | 1.9 | 1.5 | 2.0 |
| 25 | 1.5 | 2.3 | 1.8 | 195 | 60 | 1.5 | 6.2 | 653 | 2.7 | 2.0 | 1.5 | 2.2 |
| 26 | 1.6 | 2.2 | 1.7 | 647 | 60 | 1.5 | 4.2 | 527 | 2.3 | 2.0 | 1.5 | 2.0 |
| 27 | 1.7 | 2.2 | 1.7 | 676 | 27 | 1.6 | 4.0 | 190 | 2.4 | 2.0 | 1.5 | 2.0 |
| 28 | 1.7 | 2.1 | 1.8 | 442 | 2.1 | 1.7 | 31 | 3.0 | 2.7 | 2.0 | 1.5 | 2.2 |
| 29 | 1.5 | 2.0 | 1.8 | 7.3 | 1.9 | 1.6 | 120 | 2.8 | 2.2 | 1.9 | 1.5 | 2.3 |
| 30 | 1.7 | 2.0 | 1.8 | 6.4 | --- | 1.6 | 150 | 2.9 | 2.2 | 1.7 | 1.5 | 2.4 |
| 31 | 1.8 | --- | 1.9 | 6.0 | --- | 1.6 | --- | 3.1 | --- | 2.1 | 1.5 | --- |
| TOTAL | 38.32 | 66.8 | 68.2 | 2039.7 | 1309.4 | 254.11 | 2067.7 | 6490.9 | 81.7 | 66.0 | 57.8 | 55.8 |
| MEAN | 1.24 | 2.23 | 2.20 | 65.8 | 45.2 | 8.20 | 68.9 | 209 | 2.72 | 2.13 | 1.86 | 1.86 |
| MAX | 1.8 | 2.7 | 4.9 | 676 | 326 | 127 | 518 | 1460 | 3.2 | 2.7 | 2.6 | 3.0 |
| MIN | .78 | 1.8 | 1.7 | 1.8 | 1.6 | .23 | 1.3 | 2.8 | 2.2 | 1.2 | 1.5 | 1.1 |
| AC-FT | 76 | 132 | 135 | 4050 | 2600 | 504 | 4100 | 12870 | 162 | 131 | 115 | 111 |

CAL YR 1979 TOTAL 28441.33 MEAN 77.9 MAX 1190 MIN .08 AC-FT 56410
WTR YR 1980 TOTAL 12596.43 MEAN 34.4 MAX 1460 MIN .23 AC-FT 24990

## 08064500 CHAMBERS CREEK NEAR CORSICANA, TX

**LOCATION.**--Lat 32°06'29", long 96°22'14", Navarro County, Hydrologic Unit 12030109, near center of channel at downstream side of downstream bridge on State Highway 31, 430 ft (131 m) upstream from St. Louis Southwestern Railway Lines bridge, 6,000 ft (1,829 m) upstream from city of Corsicana diversion dam, 5.3 mi (8.5 km) east of Corsicana, and 23.0 mi (37.0 km) upstream from mouth.

**DRAINAGE AREA.**--963 mi$^2$ (2,494 km$^2$).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--March 1939 to current year.

**REVISED RECORDS.**--WSP 1922: Drainage area.

**GAGE.**--Water-stage recorder and concrete control. Datum of gage is 294.28 ft (89.696 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Water-discharge records good. Since November 1965, flow from 178 mi$^2$ (461 km$^2$) has been affected by Bardwell Lake (station 08063700). In addition, flow from 293 mi$^2$ (759 km$^2$) is affected by discharge from the flood-detention pools of 100 floodwater-retarding structures with a combined detention capacity of 84,330 acre-ft (104 hm$^3$). During year, records furnished by the city of Corsicana show 6,220 acre-ft (7.67 hm$^3$) was diverted for municipal supply from Lake Halbert located on a tributary that enters the creek below the gage. Daily discharge given in the following table does not include water diverted by the city. During the current year, records furnished by the city of Corsicana show that 3,370 acre-ft (4.16 hm$^3$) of sewage effluent was returned to a tributary that enters the creek below the gage.

**AVERAGE DISCHARGE.**--41 years (water years 1940-80), 446 ft$^3$/s (12.63 m$^3$/s), 323,100 acre-ft/yr (398 hm$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 48,000 ft$^3$/s (1,360 m$^3$/s), May 3, 1944; maximum gage height, 28.10 ft (8.565 m) May 3, 1958; no flow at times.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since at least 1870, 30 ft (9.1 m) Aug. 27, 1887, from information by local residents. Flood in December 1913 reached a stage of 27.5 ft (8.38 m), from information by local residents.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 11,300 ft$^3$/s (320 m$^3$/s) May 17 at 0545 hours, gage height, 24.05 ft (7.330 m), no peak above base of 13,000 ft$^3$/s (368 m$^3$/s); no flow Aug. 19 to Sept. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.3 | 48 | 1.1 | 34 | 135 | 62 | 79 | 356 | 81 | 6.1 | 1.3 | .00 |
| 2 | 2.0 | 24 | 1.1 | 26 | 114 | 57 | 67 | 286 | 72 | 5.4 | .86 | .00 |
| 3 | 1.9 | 14 | 1.2 | 22 | 103 | 52 | 74 | 427 | 64 | 5.3 | .49 | .00 |
| 4 | 1.4 | 8.0 | 1.8 | 19 | 94 | 45 | 420 | 282 | 58 | 4.9 | .28 | .00 |
| 5 | 1.0 | 4.0 | 2.3 | 15 | 86 | 43 | 233 | 170 | 53 | 4.6 | .20 | .00 |
| 6 | .73 | 2.8 | 1.9 | 14 | 80 | 41 | 123 | 134 | 47 | 3.3 | .12 | .00 |
| 7 | .53 | 2.0 | 2.2 | 13 | 74 | 41 | 95 | 193 | 41 | 2.8 | .11 | .00 |
| 8 | .40 | 2.0 | 2.1 | 11 | 279 | 40 | 184 | 249 | 38 | 2.1 | .10 | .00 |
| 9 | .30 | 1.8 | 1.9 | 9.5 | 1340 | 40 | 245 | 476 | 35 | 1.6 | .10 | .00 |
| 10 | .18 | 2.0 | 1.9 | 9.1 | 1310 | 41 | 227 | 356 | 32 | 1.6 | .08 | .00 |
| 11 | .22 | 2.8 | 2.2 | 9.1 | 537 | 41 | 138 | 271 | 30 | 1.4 | .07 | .00 |
| 12 | .26 | 2.6 | 2.2 | 9.1 | 583 | 39 | 57 | 234 | 28 | 1.4 | .07 | .00 |
| 13 | .18 | 2.6 | 2.6 | 8.7 | 554 | 46 | 745 | 237 | 26 | .96 | .05 | .00 |
| 14 | .13 | 2.6 | 3.4 | 7.6 | 485 | 48 | 5140 | 236 | 22 | 1.1 | .04 | .00 |
| 15 | .26 | 2.3 | 3.8 | 7.2 | 242 | 123 | 2820 | 1600 | 20 | 2.3 | .04 | .00 |
| 16 | .91 | 2.2 | 3.5 | 7.2 | 178 | 227 | 1220 | 7680 | 18 | 2.3 | .05 | .00 |
| 17 | 4.2 | 2.1 | 2.8 | 6.9 | 148 | 620 | 1040 | 10600 | 21 | 2.1 | .04 | .00 |
| 18 | 4.0 | 1.9 | 2.6 | 6.9 | 122 | 224 | 681 | 9050 | 20 | 1.9 | .02 | .00 |
| 19 | 3.0 | 1.9 | 2.4 | 6.9 | 113 | 103 | 262 | 5570 | 18 | 1.7 | .00 | .00 |
| 20 | 2.8 | 3.0 | 2.0 | 1080 | 107 | 71 | 191 | 1600 | 17 | 1.7 | .00 | .00 |
| 21 | 1.8 | 2.8 | 2.2 | 1150 | 101 | 57 | 161 | 1760 | 19 | 1.6 | .00 | .00 |
| 22 | 1.1 | 2.5 | 317 | 3130 | 92 | 49 | 138 | 1700 | 17 | 1.5 | .00 | .00 |
| 23 | .91 | 3.4 | 571 | 8320 | 154 | 44 | 122 | 1060 | 15 | 1.2 | .00 | .00 |
| 24 | .91 | 3.5 | 2720 | 5380 | 172 | 44 | 109 | 888 | 13 | .95 | .00 | .00 |
| 25 | .72 | 2.8 | 1110 | 1490 | 167 | 44 | 2870 | 822 | 12 | .77 | .00 | .00 |
| 26 | .72 | 2.3 | 269 | 1040 | 162 | 43 | 8870 | 772 | 12 | .61 | .00 | .00 |
| 27 | .72 | 2.1 | 152 | 981 | 153 | 47 | 2280 | 599 | 11 | .42 | .00 | .00 |
| 28 | 1.0 | 1.6 | 104 | 841 | 79 | 92 | 585 | 185 | 9.9 | 2.4 | .00 | .01 |
| 29 | 1.0 | 1.2 | 77 | 350 | 62 | 210 | 456 | 128 | 8.6 | 1.7 | .00 | 1.1 |
| 30 | 1.8 | 1.2 | 57 | 210 | --- | 147 | 427 | 111 | 6.7 | 5.0 | .00 | 1.5 |
| 31 | 23 | --- | 43 | 169 | --- | 105 | --- | 94 | --- | 3.0 | .00 | --- |
| TOTAL | 60.38 | 156.0 | 5467.2 | 24383.2 | 7826 | 2886 | 30059 | 48126 | 865.2 | 73.71 | 4.02 | 2.61 |
| MEAN | 1.95 | 5.20 | 176 | 787 | 270 | 93.1 | 1002 | 1552 | 28.8 | 2.38 | .13 | .087 |
| MAX | 23 | 48 | 2720 | 8320 | 1340 | 620 | 8870 | 10600 | 81 | 6.1 | 1.3 | 1.5 |
| MIN | .13 | 1.2 | 1.1 | 6.9 | 62 | 39 | 57 | 94 | 6.7 | .42 | .00 | .00 |
| AC-FT | 120 | 309 | 10840 | 48360 | 15520 | 5720 | 59620 | 95460 | 1720 | 146 | 8.0 | 5.2 |

CAL YR 1979 TOTAL 158224.48 MEAN 433 MAX 11200 MIN .13 AC-FT 313800
WTR YR 1980 TOTAL 119909.32 MEAN 328 MAX 10600 MIN .00 AC-FT 237800

## TRINITY RIVER BASIN

## 08064500 CHAMBERS CREEK NEAR CORSICANA, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: September 1961 to current year. Water temperatures: September 1961 to September 1970.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICROMHOS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 02... | 1500 | 2.1 | 512 | 22.5 | 170 | 21 | 61 | 3.9 | 37 |
| DEC 18... | 1630 | 2.6 | 756 | 6.0 | 220 | 35 | 80 | 5.7 | 74 |
| MAR 12... | 1350 | 38 | 644 | 14.0 | 210 | 42 | 78 | 4.7 | 45 |
| APR 17... | 0915 | 1060 | 386 | 15.5 | 150 | 27 | 55 | 3.2 | 17 |
| MAY 20... | 1800 | 1150 | 403 | 22.5 | 160 | 28 | 59 | 3.0 | 19 |
| JUL 01... | 1650 | 6.4 | 700 | 31.0 | 210 | 50 | 77 | 5.2 | 63 |

| DATE | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 02... | 1.2 | 5.1 | 180 | 0 | 65 | 31 | .4 | 7.0 | 299 |
| DEC 18... | 2.2 | 6.5 | 230 | 0 | 100 | 65 | .5 | 6.1 | 451 |
| MAR 12... | 1.3 | 3.8 | 210 | 0 | 100 | 42 | .4 | .9 | 378 |
| APR 17... | .6 | 3.8 | 150 | 0 | 42 | 13 | .3 | 4.3 | 213 |
| MAY 20... | .7 | 4.2 | 160 | 0 | 47 | 11 | .4 | 11 | 233 |
| JUL 01... | 1.9 | 4.5 | 200 | 0 | 100 | 62 | .5 | 6.4 | 417 |

## 08064600 RICHLAND CREEK NEAR FAIRFIELD, TX

LOCATION.--Lat 31°57'08", long 96°05'50", Freestone County, Hydrologic Unit 12030108, on downstream side of highway embankment near left end of bridge on Farm Road 488, 2.1 mi (3.4 km) upstream from Alligator Creek, 5.4 mi (8.7 km) upstream from mouth, 9.0 mi (14.5 km) downstream from Chambers Creek, and 10 mi (16 km) north of Fairfield.

DRAINAGE AREA.--1,957 mi² (5,069 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1972 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 230.83 ft (70.357 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair above 500 ft³/s (14.2 m³/s) and good below. Flow is partly regulated by Navarro Mills Lake (station 08063050) on Richland Creek and Bardwell Lake (station [illegible]) on Waxahachie Creek. Flow is affected at times by discharge from the flood-detention pools of 176 floodwater-retarding structures with a combined detention capacity of 128,000 acre-ft (158 hm³). These structures control runoff from 440 mi² (1,140 km²) in the Richland and Chambers Creeks drainage basins. Records furnished by the city of Corsicana show that during the year about 3,370 acre-ft (4.16 hm³) of sewage effluent was returned to a tributary upstream.

AVERAGE DISCHARGE.--8 years (water years 1973-80), 1,011 ft³/s (28.63 m³/s), 732,500 acre-ft/yr (903 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 29,300 ft³/s (830 m³/s) Apr. 28, 1973, gage height, 28.76 ft (8.766 m); minimum daily, 0.02 ft³/s (0.01 m³/s) July 24, Aug. 20 to Sept. 2, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1971 reached a stage of 31.5 ft (9.60 m), from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,600 ft³/s (527 m³/s) May 16 at 2400 hours, gage height, 27.27 ft (8.313 m), from graph based on once-daily gage readings; minimum daily, 5.0 ft³/s (0.14 m³/s) Sept. 24, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 | 139 | 18 | 406 | 1070 | 98 | 408 | [illegible] | 710 | [illegible] | [illegible] | [illegible] |
| 2 | 19 | 102 | 17 | 337 | 470 | 101 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | 18 | 66 | 19 | 304 | 300 | 93 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | 18 | 56 | 24 | 283 | 333 | 87 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | 16 | 45 | 22 | 271 | 321 | 78 | 482 | 1300 | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | 16 | 34 | 21 | 173 | 254 | 72 | 283 | 1080 | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | 14 | 28 | 20 | 91 | 184 | 70 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | 12 | 24 | 19 | 67 | 232 | 68 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | 11 | 22 | 19 | 60 | 3030 | 66 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | 11 | 19 | 19 | 61 | 3430 | 66 | 317 | 1800 | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | 11 | 19 | 23 | 56 | 3180 | 66 | 508 | 1300 | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | 11 | 20 | 122 | 48 | 2790 | [illegible] | 430 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | 10 | 20 | 386 | 43 | 1830 | 75 | 442 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | 10 | 21 | 299 | 40 | 1600 | 112 | 2300 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | 11 | 20 | 165 | 37 | 1300 | 122 | 5620 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | 17 | 20 | 89 | 36 | 1060 | 164 | 4220 | 6700 | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | 33 | 20 | 57 | 35 | 978 | 326 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | 29 | 19 | 42 | 34 | 742 | 306 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | 26 | 21 | 35 | 33 | 280 | 239 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | 24 | 22 | 31 | 38 | 232 | 157 | 5470 | 13000 | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | 19 | 22 | 28 | 1240 | 186 | 115 | 1220 | 7300 | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | 19 | 22 | 706 | 2430 | 167 | 96 | 1160 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | 18 | 22 | 1800 | 7640 | 134 | 62 | 1100 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | 31 | 22 | 3160 | 10400 | 207 | 72 | 1060 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | 21. | 21 | 4470 | 10600 | 211 | 66 | 1100 | 2300 | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | 16 | 24 | 2880 | 8840 | 203 | 67 | 3030 | 2100 | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | 16 | 22 | 823 | 5220 | 197 | 66 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | 16 | 19 | 454 | 3810 | 190 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | 14 | 18 | 438 | 2260 | 135 | 409 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | 18 | 18 | 315 | 1420 | ---- | 1180 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | 186 | ---- | 332 | 1250 | ---- | 1800 | ---- | 881 | ---- | [illegible] | [illegible] | ---- |
| TOTAL | 709 | 947 | 17835 | 57373 | 28574 | 6117 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MEAN | 22.9 | 31.6 | 576 | 1851 | 985 | 197 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MAX | 186 | 139 | 4470 | 10600 | 3430 | 1180 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MIN | 10 | 18 | 17 | 33 | 133 | 66 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| AC-FT | 1410 | 1880 | 35420 | 113800 | 56680 | 12130 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

CAL YR 1979 TOTAL 345351.0 MEAN 946 MAX 11600 MIN 10 AC-FT 685000
WTR YR 1980 TOTAL 287045.7 MEAN 784 MAX 13700 MIN 5.0 AC-FT 569400

## 08064600 RICHLAND CREEK NEAR FAIRFIELD, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1956 to September 1966, March 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1956 to September 1966, March 1972 to current year.
WATER TEMPERATURES: April 1956 to Sepember 1966, March 1972 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 22,000 micromhos Aug. 22, 1956; minimum daily, 154 micromhos June 17, 1977.
WATER TEMPERATURES: Maximum daily, 37.0°C Aug. 14, 1961; minimum daily, 0.0°C Jan. 3, 4, 1959.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,290 micromhos July 26; minimum daily, 220 micromhos Jan. 25.
WATER TEMPERATURES: Maximum daily, 35.0°C July 9, 10; minimum daily, 5.0°C Feb. 10.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | |
| 18... | 1830 | 25 | 964 | -- | 25.0 | 230 | 38 | 79 | 7.1 | 110 |
| NOV | | | | | | | | | | |
| 17... | 1730 | 19 | 744 | -- | 14.0 | 220 | 44 | 78 | 7.2 | 68 |
| DEC | | | | | | | | | | |
| 25... | 2030 | 4370 | 274 | -- | 12.5 | 110 | 8 | 38 | 2.9 | 12 |
| FEB | | | | | | | | | | |
| 29... | 2230 | 151 | 504 | 8.2 | 16.0 | 170 | 26 | 59 | 4.4 | 34 |
| MAR | | | | | | | | | | |
| 31... | 1800 | 837 | 397 | -- | 17.0 | 140 | 27 | 50 | 4.1 | 24 |
| APR | | | | | | | | | | |
| 16... | 1115 | 6830 | 331 | -- | 16.0 | 120 | 16 | 44 | 3.0 | 13 |
| JUN | | | | | | | | | | |
| 30... | 2300 | 18 | 884 | -- | 31.5 | 250 | 56 | 89 | 7.5 | 88 |
| JUL | | | | | | | | | | |
| 28... | 1830 | 20 | 1240 | -- | 33.0 | 300 | 110 | 100 | 11 | 140 |
| AUG | | | | | | | | | | |
| 31... | 2300 | 9.1 | 905 | -- | 29.0 | 220 | 38 | 74 | 8.1 | 110 |

| DATE | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | |
| 18... | 3.2 | 8.2 | 230 | 0 | 100 | 140 | .5 | 7.6 | 566 |
| NOV | | | | | | | | | |
| 17... | 2.0 | 7.5 | 220 | 0 | 100 | 66 | .5 | 6.7 | 442 |
| DEC | | | | | | | | | |
| 25... | .5 | 6.8 | 120 | 0 | 23 | 11 | .2 | 10 | 163 |
| FEB | | | | | | | | | |
| 29... | 1.2 | 4.3 | 170 | 0 | 63 | 34 | .4 | 1.8 | 285 |
| MAR | | | | | | | | | |
| 31... | .9 | 4.5 | 140 | 0 | 48 | 20 | .4 | 5.1 | 225 |
| APR | | | | | | | | | |
| 16... | .5 | 5.2 | 130 | 0 | 28 | 11 | .2 | 9.4 | 178 |
| JUN | | | | | | | | | |
| 30... | 2.4 | 5.8 | 240 | 0 | 120 | 100 | .6 | 7.9 | 537 |
| JUL | | | | | | | | | |
| 28... | 3.5 | 7.5 | 230 | 0 | 160 | 200 | .6 | 7.0 | 739 |
| AUG | | | | | | | | | |
| 31... | 3.2 | 7.6 | 220 | 0 | 91 | 130 | .6 | 6.4 | 536 |

## 08064600 RICHLAND CREEK NEAR FAIRFIELD, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 709 | 768 | 446 | 855 | 77 | 148 | 98 | 188 | 230 |
| NOV. | 1979 | 947 | 694 | 402 | 1030 | 63 | 160 | 89 | 228 | 220 |
| DEC. | 1979 | 17855 | 314 | 181 | 8700 | 14 | 664 | 41 | 2000 | 110 |
| JAN. | 1980 | 57373 | 291 | 168 | 26000 | 11 | 1780 | 39 | 5980 | 110 |
| FEB. | 1980 | 28574 | 327 | 189 | 14500 | 15 | 1140 | 43 | 3340 | 120 |
| MAR. | 1980 | 6117 | 541 | 313 | 5170 | 40 | 669 | 70 | 1160 | 180 |
| APR. | 1980 | 59326 | 336 | 194 | 31000 | 15 | 2430 | 44 | 7120 | 120 |
| MAY | 1980 | 111075 | 313 | 180 | 53900 | 13 | 3800 | 41 | 12400 | 120 |
| JUNE | 1980 | 4133 | 447 | 258 | 2880 | 28 | 315 | 58 | 651 | 150 |
| JULY | 1980 | 338.1 | 1070 | 627 | 573 | 150 | 135 | 130 | 122 | 270 |
| AUG. | 1980 | 323.6 | 862 | 502 | 439 | 95 | 83 | 110 | 96 | 250 |
| SEPT | 1980 | 275.0 | 911 | 531 | 394 | 110 | 79 | 120 | 85 | 260 |
| TOTAL |  | 287045.7 | ** | ** | 146000 | ** | 11400 | ** | 33400 | ** |
| WTD. AVG. |  | 784 | 326 | 188 | ** | 15 | ** | 43 | ** | 120 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 646 | 640 | 900 | 366 | 353 | 544 | 429 | 329 | 365 | 920 | 933 | 907 |
| 2 | 656 | 588 | 898 | 372 | 400 | 635 | 463 | 345 | 356 | 940 | 871 | 985 |
| 3 | 670 | 636 | 864 | 382 | 429 | 657 | 525 | 353 | 355 | 980 | 874 | 957 |
| 4 | 676 | 686 | 908 | 390 | 439 | 754 | 650 | 368 | 361 | 962 | 862 | 980 |
| 5 | 682 | 608 | 820 | 394 | 445 | 715 | 754 | 348 | 403 | 987 | 853 | 953 |
| 6 | 690 | 595 | 726 | 442 | 449 | 701 | 578 | 361 | 447 | 1010 | 865 | 882 |
| 7 | 712 | 590 | 742 | 500 | 529 | 696 | 637 | 397 | 523 | 990 | 866 | 773 |
| 8 | 736 | 620 | 828 | 574 | 500 | 715 | 777 | 483 | 568 | 991 | 844 | 753 |
| 9 | 744 | 684 | 788 | 602 | 317 | 736 | 580 | 333 | 606 | 996 | 838 | 798 |
| 10 | 756 | 672 | 780 | 632 | 243 | 754 | 425 | 360 | 615 | 1010 | 840 | 937 |
| 11 | 780 | 664 | 770 | 644 | 246 | 788 | 414 | 349 | 625 | 1020 | 836 | 1010 |
| 12 | 792 | 678 | 590 | 675 | 305 | 774 | 404 | 342 | 647 | 1020 | 844 | 968 |
| 13 | 802 | 728 | 270 | 702 | 330 | 782 | 376 | 310 | 674 | 1000 | 848 | 885 |
| 14 | 830 | 748 | 246 | 726 | 356 | 825 | 338 | 306 | 699 | 990 | 830 | 882 |
| 15 | 835 | 754 | 408 | 746 | 361 | 949 | 293 | 329 | 722 | 1010 | 820 | 880 |
| 16 | 840 | 734 | 500 | 760 | 356 | 924 | 331 | 272 | 738 | 1020 | 826 | 844 |
| 17 | 888 | 740 | 560 | 776 | 415 | 420 | 359 | 255 | 762 | 1010 | 854 | 829 |
| 18 | 964 | 744 | 570 | 784 | 489 | 400 | 363 | 281 | 760 | 1020 | 849 | 835 |
| 19 | 988 | 752 | 610 | 800 | 505 | 492 | 369 | 290 | 788 | 1040 | 842 | 837 |
| 20 | 952 | 734 | 644 | 798 | 543 | 594 | 367 | 325 | 760 | 1060 | 826 | 844 |
| 21 | 1100 | 710 | 672 | 400 | 593 | 625 | 377 | 347 | 774 | 1070 | 825 | 851 |
| 22 | 930 | 694 | 550 | 370 | 619 | 658 | 375 | 324 | 803 | 1170 | 823 | 868 |
| 23 | 796 | 716 | 368 | 294 | 626 | 668 | 371 | 327 | 780 | 1220 | 809 | 887 |
| 24 | 742 | 786 | 268 | 242 | 622 | 680 | 370 | 324 | 790 | 1240 | 816 | 930 |
| 25 | 756 | 898 | 250 | 220 | 510 | 683 | 379 | 323 | 808 | 1140 | 852 | 949 |
| 26 | 758 | 914 | 296 | 274 | 493 | 680 | 248 | 325 | 876 | 1290 | 901 | 998 |
| 27 | 772 | 892 | 320 | 320 | 497 | 651 | 287 | 322 | 904 | 1260 | 936 | 1000 |
| 28 | 824 | 904 | 328 | 354 | 497 | 697 | 300 | 320 | 855 | 1240 | 953 | 964 |
| 29 | 820 | 906 | 316 | 346 | 504 | 550 | 307 | 319 | 870 | 1210 | 949 | 1010 |
| 30 | 732 | 882 | 354 | 342 | --- | 425 | 327 | 327 | 884 | 1040 | 938 | 1030 |
| 31 | 660 | --- | 334 | 346 | --- | 397 | --- | 335 | --- | 990 | 905 | --- |
| MEAN | 791 | 730 | 564 | 502 | 447 | 664 | 426 | 333 | 671 | 1060 | 862 | 908 |

08064600 RICHLAND CREEK NEAR FAIRFIELD, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 28.0 | 17.0 | 9.5 | 10.0 | 7.5 | 11.5 | 18.5 | 21.0 | 27.0 | 31.5 | 33.5 | 30.0 |
| 2 | 26.0 | 16.5 | 9.0 | 10.5 | --- | 10.0 | 19.0 | --- | 28.0 | --- | 33.0 | 29.5 |
| 3 | 23.0 | 17.0 | 10.0 | 10.0 | 7.5 | 12.0 | 21.0 | 21.0 | 27.0 | 33.0 | 32.5 | 32.0 |
| 4 | 23.0 | 16.0 | 10.0 | 9.0 | 9.0 | 16.0 | --- | 22.0 | 28.5 | 33.0 | 30.5 | 31.5 |
| 5 | 23.5 | 17.0 | 8.0 | 9.0 | 10.0 | 15.0 | 18.5 | 22.0 | 28.5 | 34.0 | 31.5 | 30.5 |
| 6 | 23.0 | 15.0 | 11.0 | 11.0 | 8.0 | 17.0 | 18.0 | 23.0 | 30.0 | 34.0 | 32.0 | 28.0 |
| 7 | 25.0 | 12.5 | 9.0 | 10.0 | 10.0 | 18.0 | 22.5 | 25.0 | 30.0 | 33.0 | 33.0 | 27.5 |
| 8 | 25.0 | 16.0 | 9.0 | 10.0 | 10.0 | --- | 21.5 | 23.5 | 30.0 | 33.0 | 33.0 | 27.5 |
| 9 | 24.5 | 18.0 | 11.0 | 8.5 | 6.0 | 16.5 | 20.0 | 21.0 | 28.0 | 35.0 | 31.0 | 30.0 |
| 10 | 19.5 | 14.5 | 12.0 | 12.0 | 5.0 | 18.0 | 19.0 | 22.0 | 30.0 | 35.0 | 30.0 | 31.5 |
| 11 | 22.5 | 14.0 | 12.5 | 11.0 | 6.0 | 18.0 | 22.0 | 23.0 | 30.5 | 33.5 | 32.0 | 28.0 |
| 12 | 23.5 | 13.0 | 13.0 | --- | 8.0 | 19.5 | 18.0 | 23.0 | 28.5 | 34.0 | 32.0 | 30.0 |
| 13 | 22.5 | 14.0 | 10.0 | 11.5 | --- | 19.0 | 13.0 | 23.0 | 30.0 | 32.0 | 33.0 | 29.0 |
| 14 | 22.0 | 10.0 | 10.0 | 13.0 | 11.0 | 17.5 | 12.0 | 23.0 | 30.0 | 34.0 | 31.5 | --- |
| 15 | --- | 12.0 | 10.0 | 14.0 | 10.0 | 19.0 | 13.5 | 21.0 | 30.5 | 34.0 | 31.0 | 31.0 |
| 16 | 22.0 | 12.5 | 8.5 | 15.0 | 8.5 | 18.5 | 16.5 | 22.0 | 30.0 | 34.0 | 29.0 | 31.0 |
| 17 | 23.5 | 14.0 | 7.0 | 15.0 | 9.0 | 17.5 | 17.5 | 23.0 | 30.0 | 34.0 | 30.0 | 31.0 |
| 18 | 25.0 | 14.0 | 7.5 | 13.0 | 10.5 | 17.0 | 18.0 | 25.0 | 30.5 | 34.5 | 31.0 | 28.0 |
| 19 | 25.0 | 17.0 | 9.0 | 14.5 | 13.0 | 18.0 | 17.0 | 25.5 | 32.0 | 33.5 | 30.5 | 30.0 |
| 20 | 25.0 | 19.0 | 12.0 | 14.5 | 14.0 | 18.0 | 19.0 | 26.0 | 29.0 | 33.0 | 30.5 | 28.0 |
| 21 | 26.0 | 16.0 | 12.0 | 13.5 | 15.0 | 18.0 | 19.5 | 24.5 | 32.0 | 32.0 | 30.0 | 29.0 |
| 22 | 23.0 | 12.5 | --- | 11.5 | 17.0 | 19.0 | 19.0 | 23.0 | 30.0 | 33.5 | 31.0 | 30.0 |
| 23 | 20.5 | 13.0 | 15.0 | 10.5 | 15.0 | 19.0 | 20.0 | 24.0 | 32.5 | 32.0 | 32.0 | 30.5 |
| 24 | 17.0 | 13.5 | 14.0 | 10.0 | 15.0 | 17.0 | 21.0 | 25.0 | 32.0 | 34.0 | 31.0 | 29.0 |
| 25 | 19.5 | 14.0 | 12.5 | 10.5 | 15.0 | 17.0 | 21.0 | --- | 32.0 | 33.0 | 32.0 | 27.5 |
| 26 | 20.5 | 13.0 | 12.5 | 10.0 | 14.0 | 17.0 | 19.0 | 26.0 | 33.0 | 33.5 | 31.0 | 25.0 |
| 27 | 21.0 | 15.5 | 13.0 | 10.0 | 14.0 | 16.0 | 18.0 | 26.0 | 32.0 | --- | 31.0 | 23.0 |
| 28 | 21.0 | 12.5 | 12.0 | 10.0 | 16.0 | 18.0 | 18.0 | 26.5 | 33.0 | 33.0 | 29.0 | 23.0 |
| 29 | 22.0 | 10.5 | 12.0 | 9.0 | 16.0 | 18.0 | 20.0 | 26.0 | 33.0 | 34.0 | 30.0 | 22.0 |
| 30 | 20.0 | 9.0 | 11.5 | 10.0 | --- | 17.5 | 20.5 | 26.0 | 31.5 | 34.0 | 30.5 | 22.5 |
| 31 | 17.0 | --- | 11.0 | 9.0 | --- | 17.0 | --- | 26.5 | --- | 33.0 | 29.0 | --- |
| MEAN | 22.5 | 14.5 | 11.0 | 11.0 | 11.0 | 17.0 | 18.5 | 23.5 | 30.5 | 33.5 | 31.0 | 28.5 |

## 08064700 TEHUACANA CREEK NEAR STREETMAN, TX

**LOCATION.**--Lat 31°50'54", long 96°17'23", Freestone County, Hydrologic Unit 12030201, on downstream side of bridge on U.S. Highway 75, 2.8 mi (4.5 km) southeast of Streetman, 3.1 mi (5.0 km) downstream from Chicago, Rock Island, and Pacific Railroad Co. bridge, 3.8 mi (6.1 km) upstream from Caney Creek, and 25 mi (40 km) upstream from mouth.

**DRAINAGE AREA.**--142 mi² (368 km²).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--April 1968 to current year.

**GAGE.**--Water-stage recorder and crest-stage gage. Datum of gage is 287.58 ft (87.654 m) National Geodetic Vertical Datum of 1929.

**REMARKS.**--Water-discharge records good.

**AVERAGE DISCHARGE.**--12 years, 76.0 ft³/s (2.152 m³/s), 7.27 in/yr (185 mm/yr), 55,060 acre-ft/yr (67.9 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 23,100 ft³/s (654 m³/s) May 10, 1968, gage height, 25.00 ft (7.620 m); no flow at times most years.
Maximum stage since at least 1932, that of May 10, 1968.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood in September 1932 reached a stage of about 24 ft (7.3 m), from information by State Department of Highways and Public Transportation.

**EXTREMES FOR CURRENT YEAR.**--Peak discharges above base of 2,500 ft³/s (70.8 m³/s) and maximum (*):

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dec. 24 | 0045 | 2,600 | 73.6 | 20.44 | 6.230 | May 13 | 0245 | *6,190 | 175 | 23.41 | 7.135 |
| Jan. 22 | 1545 | 4,740 | 134 | 22.86 | 6.968 | May 16 | 0430 | 4,450 | 126 | 22.69 | 6.916 |

Minimum discharge, no flow June 26 to Sept. 30.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
### MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .64 | 17 | .26 | 16 | 8.4 | 1.1 | 1.9 | 2.6 | 1.6 | .00 | .00 | .00 |
| 2 | .50 | 6.5 | .20 | 9.5 | 7.7 | 1.1 | 1.2 | 2.5 | 1.3 | .00 | .00 | .00 |
| 3 | .48 | 2.9 | .16 | 7.0 | 7.0 | 1.0 | .85 | 2.3 | 1.1 | .00 | .00 | .00 |
| 4 | .39 | 1.6 | .13 | 5.7 | 6.5 | .96 | .61 | 3.1 | .92 | .00 | .00 | .00 |
| 5 | .35 | 1.1 | .11 | 4.5 | 5.9 | .91 | .59 | 2.2 | .75 | .00 | .00 | .00 |
| 6 | .30 | .39 | 1.1 | 3.5 | 5.3 | .84 | .42 | 2.0 | .61 | .00 | .00 | .00 |
| 7 | .36 | .31 | .26 | 2.8 | 4.9 | .72 | .36 | 2.3 | .46 | .00 | .00 | .00 |
| 8 | .39 | .24 | .28 | 2.2 | 4.9 | .67 | .34 | 621 | .32 | .00 | .00 | .00 |
| 9 | .43 | .17 | .45 | 1.7 | 4.9 | .63 | .30 | 156 | .28 | .00 | .00 | .00 |
| 10 | .45 | .12 | 1.7 | 1.5 | 4.8 | .59 | .28 | 41 | .27 | .00 | .00 | .00 |
| 11 | .46 | .08 | 2.4 | 1.4 | 4.7 | .56 | .25 | 18 | .23 | .00 | .00 | .00 |
| 12 | .52 | .05 | 290 | 1.3 | 4.5 | .71 | 12 | 1780 | .17 | .00 | .00 | .00 |
| 13 | .55 | .03 | 643 | 1.1 | 4.4 | .74 | 1090 | 3470 | .14 | .00 | .00 | .00 |
| 14 | .53 | .03 | 63 | 1.0 | 4.3 | .68 | 896 | 1090 | .10 | .00 | .00 | .00 |
| 15 | .67 | .03 | 15 | .88 | 4.2 | .52 | 96 | 1140 | .07 | .00 | .00 | .00 |
| 16 | .81 | .04 | 5.6 | .87 | 4.1 | .45 | 29 | 2600 | .05 | .00 | .00 | .00 |
| 17 | .96 | .04 | 3.0 | 1.3 | 3.9 | .45 | 15 | 476 | .03 | .00 | .00 | .00 |
| 18 | 1.2 | .05 | 1.6 | 1.5 | 3.8 | .38 | 9.9 | 100 | .03 | .00 | .00 | .00 |
| 19 | 1.4 | .07 | 1.0 | 1.3 | 3.7 | .36 | 7.7 | 43 | .02 | .00 | .00 | .00 |
| 20 | 1.6 | .07 | .63 | 7.5 | 3.8 | .38 | 6.2 | 23 | .10 | .00 | .00 | .00 |
| 21 | 1.6 | .09 | .63 | 16 | 3.7 | .33 | 5.4 | 16 | .07 | .00 | .00 | .00 |
| 22 | 1.7 | .09 | 665 | 3040 | 3.5 | .29 | 4.6 | 12 | .05 | .00 | .00 | .00 |
| 23 | 1.8 | .09 | 624 | 1560 | 3.3 | .30 | 4.3 | 8.8 | .03 | .00 | .00 | .00 |
| 24 | 1.9 | .09 | 1250 | 143 | 2.9 | .33 | 3.9 | 7.4 | .02 | .00 | .00 | .00 |
| 25 | 2.0 | .08 | 104 | 43 | 2.3 | .32 | 88 | 5.9 | .01 | .00 | .00 | .00 |
| 26 | 2.0 | .90 | 29 | 25 | 1.9 | .38 | 66 | 5.1 | .00 | .00 | .00 | .00 |
| 27 | 2.2 | .72 | 15 | 18 | 1.4 | 1.7 | 13 | 4.3 | .00 | .00 | .00 | .00 |
| 28 | 2.6 | .26 | 9.0 | 14 | 1.2 | 118 | 6.2 | 3.5 | .00 | .00 | .00 | .00 |
| 29 | 2.9 | .42 | 366 | 12 | 1.2 | 22 | 4.3 | 2.9 | .00 | .00 | .00 | .00 |
| 30 | 9.5 | .33 | 163 | 11 | --- | 8.4 | 3.3 | 2.4 | .00 | .00 | .00 | .00 |
| 31 | 142 | --- | 38 | 9.6 | --- | 3.7 | --- | 2.0 | --- | .00 | .00 | --- |
| TOTAL | 183.19 | 33.89 | 4293.51 | 4964.15 | 123.1 | 169.50 | 2367.90 | 11645.3 | 8.73 | .00 | .00 | .00 |
| MEAN | 5.91 | 1.13 | 139 | 160 | 4.24 | 5.47 | 78.9 | 376 | .29 | .000 | .000 | .000 |
| MAX | 142 | 17 | 1250 | 3040 | 8.4 | 118 | 1090 | 3470 | 1.6 | .00 | .00 | .00 |
| MIN | .30 | .03 | .11 | .87 | 1.2 | .29 | .25 | 2.0 | .00 | .00 | .00 | .00 |
| CFSM | .04 | .008 | .98 | 1.13 | .03 | .04 | .56 | 2.65 | .002 | .000 | .000 | .000 |
| IN. | .05 | .01 | 1.12 | 1.30 | .03 | .04 | .62 | 3.05 | .00 | .00 | .00 | .00 |
| AC-FT | 363 | 67 | 8520 | 9850 | 244 | 336 | 4700 | 23100 | 17 | .00 | .00 | .00 |

CAL YR 1979 TOTAL 37348.39 MEAN 102 MAX 5390 MIN .00 CFSM .72 IN 9.78 AC-FT 74080
WTR YR 1980 TOTAL 23789.27 MEAN 65.0 MAX 3470 MIN .00 CFSM .46 IN 6.23 AC-FT 47190

## 08064700 TEHUACANA CREEK NEAR STREETMAN, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: February 1968 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 03... | 1115 | .48 | 876 | 22.0 | 210 | 54 | 51 | 20 | 100 |
| DEC 19... | 1210 | .99 | 560 | 4.0 | 120 | 41 | 31 | 11 | 61 |
| JAN 30... | 1300 | 11 | 634 | 4.5 | 150 | 46 | 38 | 14 | 66 |
| MAR 11... | 1640 | .54 | 1340 | 15.0 | 310 | 120 | 77 | 29 | 150 |
| APR 16... | 1330 | 28 | 343 | 16.5 | 78 | 21 | 20 | 6.8 | 31 |
| MAY 21... | 1500 | 16 | 748 | 26.5 | 170 | 43 | 45 | 15 | 87 |

| DATE | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 03... | 3.0 | 6.4 | 190 | 0 | 98 | 130 | .2 | 11 | 510 |
| DEC 19... | 2.4 | 7.3 | 100 | 0 | 54 | 89 | .2 | 9.1 | 312 |
| JAN 30... | 2.3 | 5.7 | 130 | 0 | 74 | 87 | .2 | 10 | 359 |
| MAR 11... | 3.7 | 6.4 | 230 | 0 | 180 | 220 | .3 | 9.5 | 786 |
| APR 16... | 1.5 | 5.7 | 70 | 0 | 37 | 45 | .1 | 9.2 | 189 |
| MAY 21... | 2.9 | 6.4 | 160 | 0 | 84 | 110 | .3 | 14 | 441 |

## 08064800 CATFISH CREEK NEAR TENNESSEE COLONY, TX

LOCATION.--Lat 31°52'51", long 95°52'07", Anderson County, Hydrologic Unit 12030201, on left bank 35 ft (11 m) downstream from bridge on U.S. Highway 287, 2 mi (3 km) upstream from Beaver Creek, 3.5 mi (5.6 km) northwest of Tennessee Colony, 12 mi (19 km) downstream from Coon Creek Lake, and 12 mi (19 km) upstream from mouth.

DRAINAGE AREA.--207 mi² (536 km²).

PERIOD OF RECORD.--April 1962 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 234.93 ft (71.607 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some regulation upstream by Coon Creek Lake. No known diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--18 years, 103 ft³/s (2.917 m³/s), 74,620 acre-ft/yr (92.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,550 ft³/s (214 m³/s) May 11, 1968, gage height, 15.90 ft (4.846 m); minimum daily, 0.8 ft³/s (0.023 m³/s) Aug. 19-21, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1927, 22 ft (6.7 m) in June 1944 as a result of dam failure at Coon Creek Lake, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 618 ft³/s (17.5 m³/s) Apr. 16 (time unknown), gage height, 10.30 ft (3.139 m), no peak above base of 1,400 ft³/s (39.6 m³/s); minimum daily, 3.3 ft³/s (0.093 m³/s) Aug. 24-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 39 | 72 | 51 | 125 | 145 | 85 | 200 | 74 | 50 | 22 | 14 | 7.5 |
| 2 | 36 | 82 | 45 | 117 | 148 | 84 | 160 | 70 | 45 | 20 | 11 | 7.6 |
| 3 | 33 | 82 | 41 | 109 | 134 | 84 | 140 | 68 | 41 | 18 | 8.6 | 7.8 |
| 4 | 29 | 72 | 41 | 105 | 123 | 84 | 120 | 64 | 37 | 15 | 7.1 | 7.8 |
| 5 | 27 | 59 | 43 | 109 | 117 | 84 | 110 | 62 | 34 | 13 | 6.3 | 7.0 |
| 6 | 25 | 49 | 47 | 112 | 112 | 83 | 98 | 60 | 33 | 12 | 5.7 | 5.6 |
| 7 | 23 | 45 | 49 | 107 | 108 | 83 | 90 | 60 | 30 | 11 | 5.8 | 4.9 |
| 8 | 22 | 44 | 51 | 99 | 136 | 80 | 84 | 85 | 26 | 10 | 7.0 | 4.8 |
| 9 | 21 | 37 | 49 | 94 | 283 | 78 | 78 | 78 | 26 | 9.2 | 7.6 | 5.6 |
| 10 | 20 | 36 | 47 | 89 | 473 | 78 | 74 | 74 | 28 | 8.8 | 7.9 | 6.5 |
| 11 | 21 | 38 | 46 | 88 | 537 | 78 | 70 | 72 | 27 | 8.5 | 7.8 | 6.8 |
| 12 | 19 | 39 | 80 | 86 | 437 | 82 | 150 | 82 | 26 | 7.9 | 7.7 | 6.1 |
| 13 | 16 | 35 | 140 | 87 | 340 | 86 | 390 | 126 | 24 | 7.6 | 8.0 | 5.2 |
| 14 | 14 | 33 | 276 | 84 | 276 | 90 | 540 | 145 | 22 | 7.2 | 8.1 | 4.8 |
| 15 | 13 | 31 | 326 | 82 | 234 | 88 | 600 | 250 | 18 | 6.9 | 8.1 | 4.8 |
| 16 | 15 | 30 | 260 | 82 | 196 | 84 | 480 | 368 | 15 | 6.6 | 8.5 | 4.9 |
| 17 | 18 | 30 | 180 | 78 | 173 | 80 | 400 | 396 | 14 | 6.5 | 6.9 | 4.8 |
| 18 | 18 | 31 | 135 | 79 | 158 | 80 | 320 | 474 | 14 | 6.1 | 5.4 | 4.5 |
| 19 | 19 | 36 | 112 | 79 | 137 | 78 | 250 | 436 | 14 | 5.8 | 4.5 | 5.3 |
| 20 | 24 | 43 | 95 | 79 | 120 | 82 | 200 | 320 | 41 | 5.5 | 4.0 | 5.2 |
| 21 | 22 | 57 | 87 | 94 | 113 | 120 | 160 | 235 | 86 | 6.2 | 3.7 | 5.6 |
| 22 | 21 | 82 | 113 | 187 | 108 | 160 | 120 | 177 | 110 | 9.4 | 3.7 | 5.5 |
| 23 | 22 | 98 | 151 | 302 | 103 | 130 | 96 | 139 | 143 | 8.6 | 3.6 | 5.0 |
| 24 | 26 | 113 | 240 | 472 | 97 | 110 | 80 | 111 | 166 | 10 | 3.3 | 4.6 |
| 25 | 25 | 105 | 317 | 455 | 93 | 90 | 90 | 94 | 131 | 11 | 3.3 | 4.8 |
| 26 | 23 | 85 | 316 | 326 | 91 | 80 | 100 | 86 | 86 | 10 | 3.3 | 5.6 |
| 27 | 22 | 69 | 250 | 233 | 91 | 74 | 96 | 80 | 59 | 9.4 | 3.6 | 6.2 |
| 28 | 21 | 61 | 183 | 176 | 90 | 76 | 88 | 76 | 42 | 19 | 4.6 | 7.3 |
| 29 | 20 | 56 | 150 | 155 | 86 | 90 | 84 | 70 | 32 | 20 | 6.3 | 7.9 |
| 30 | 26 | 54 | 134 | 144 | --- | 130 | 78 | 63 | 26 | 20 | 7.1 | 9.1 |
| 31 | 61 | --- | 127 | 143 | --- | 200 | --- | 56 | --- | 18 | 7.4 | --- |
| TOTAL | 741 | 1704 | 4182 | 4577 | 5259 | 2911 | 5546 | 4551 | 1446 | 349.2 | 199.9 | 179.1 |
| MEAN | 23.9 | 56.8 | 135 | 148 | 181 | 93.9 | 185 | 147 | 48.2 | 11.3 | 6.45 | 5.97 |
| MAX | 61 | 113 | 326 | 472 | 537 | 200 | 600 | 474 | 166 | 22 | 14 | 9.1 |
| MIN | 13 | 30 | 41 | 78 | 86 | 74 | 70 | 56 | 14 | 5.5 | 3.3 | 4.5 |
| AC-FT | 1470 | 3380 | 8290 | 9080 | 10430 | 5770 | 11000 | 9030 | 2870 | 693 | 397 | 355 |

CAL YR 1979 TOTAL 50545.4 MEAN 138 MAX 2510 MIN 9.8 AC-FT 100300
WTR YR 1980 TOTAL 31645.2 MEAN 86.5 MAX 600 MIN 3.3 AC-FT 62770

NOTE.--No gage-height record Apr. 13-17.

## 08065000 TRINITY RIVER NEAR OAKWOOD, TX

LOCATION.--Lat 31°38'54", long 95°47'21", Anderson County, Hydrologic Unit 12030201, on left bank at downstream side of bridge on U.S. Highways 79 and 84, 1.5 mi (2.4 km) upstream from Missouri Pacific Railroad Co. bridge, 6 mi (10 km) northeast of Oakwood, and at mile 313.4 (504.3 km).

DRAINAGE AREA.--12,833 mi² (33,237 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to September 1924 (monthly discharge only), October 1924 to current year. Records of January 1905 to September 1923, published in WSP 850 and 878, have been found unreliable and should not be used. Gage-height records collected in this vicinity since 1904 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1442: 1934. See also PERIOD OF RECORD. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 175.06 ft (53.358 m) National Geodetic Vertical Datum of 1929. Prior to July 15, 1932, nonrecording gage at site 1.5 mi (2.4 km) downstream at datum 1.06 ft (0.323 m) lower. July 15, 1932, to Oct. 7, 1934, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records good. Twenty-one major reservoirs with a capacity of 4,200,000 acre-ft (5.18 km³), of which 1,362,000 acre-ft (1.68 km³) is for flood control, partly regulate the flow. Flow is affected at times by discharge from the flood-detention pools of 244 floodwater-retarding structures with a combined detention capacity of 182,180 acre-ft (225 hm³). These structures control runoff from 608 mi² (1,575 km²) in the Richland, Chambers, and Tehuacana Creeks drainage basins. The Industrial Generating Co., Fairfield, makes a minor diversion from the river at a site about 34 mi (55 km) upstream. The diversion to Big Brown Lake (formerly Fairfield Lake) is used to maintain the normal pool elevation for that lake. The National Weather Service operates a gage-height telemeter at this station.

AVERAGE DISCHARGE.--30 years (water years 1924-53) unregulated, 5,045 ft³/s (142.9 m³/s), 3,655,000 acre-ft/yr (4.51 km³/yr); 26 years (water years 1954-79) regulated, 4,472 ft³/s (126.6 m³/s), 3,240,000 acre-ft/yr (3.99 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 153,000 ft³/s (4,330 m³/s), Apr. 29, 1942, gage height, 51.64 ft (15.740 m); minimum observed, 28 ft³/s (0.79 m³/s) Aug. 24, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1890 reached a stage of 53 ft (16.2 m), discharge about 180,000 ft³/s (5,100 m³/s) and was the highest since that date, from information in local newspapers. Flood of June 4, 1908, reached a stage of 52.2 ft (15.91 m), present site and datum, from information by the National Weather Service, discharge about 164,000 ft³/s (4,640 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28,000 ft³/s (793 m³/s) May 18, gage height, 41.15 ft (12.543 m); minimum daily, 419 ft³/s (11.9 m³/s) Oct. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 771 | 1220 | 660 | 2160 | 5960 | 1290 | 4070 | 4690 | 2440 | 682 | 665 | 465 |
| 2 | 755 | 1700 | 652 | 1930 | 4390 | 1200 | 2900 | 3950 | 2100 | 655 | 622 | 480 |
| 3 | 722 | 2450 | 642 | 1680 | 3050 | 1150 | 2050 | 3500 | 1830 | 638 | 644 | 460 |
| 4 | 691 | 2220 | 631 | 1490 | 2190 | 1120 | 1510 | 3190 | 1720 | 618 | 595 | 421 |
| 5 | 681 | 1450 | 621 | 1370 | 1880 | 1090 | 1260 | 3970 | 1650 | 605 | 595 | 410 |
| 6 | 678 | 990 | 633 | 1310 | 1790 | 1060 | 1520 | 4540 | 1460 | 602 | 560 | 400 |
| 7 | 667 | 797 | 639 | 1230 | 1700 | 1030 | 1910 | 3530 | 1240 | 587 | 526 | 410 |
| 8 | 653 | 724 | 649 | 1080 | 2130 | 1020 | 1530 | 2400 | 1050 | 564 | 524 | 450 |
| 9 | 651 | 697 | 666 | 991 | 6290 | 1000 | 1240 | 2490 | 913 | 545 | 544 | 480 |
| 10 | 624 | 677 | 676 | 937 | 10900 | 994 | 1230 | 3560 | 897 | 540 | 534 | 461 |
| 11 | 597 | 666 | 666 | 928 | 12600 | 995 | 1500 | 3740 | 876 | 534 | 534 | 441 |
| 12 | 597 | 683 | 714 | 909 | 13600 | 989 | 1970 | 3800 | 835 | 530 | 560 | 500 |
| 13 | 603 | 740 | 1210 | 890 | 13100 | 1010 | 4820 | 3870 | 815 | 524 | 540 | 665 |
| 14 | 601 | 749 | 2480 | 868 | 10000 | 988 | 6430 | 4960 | 841 | 520 | 516 | 676 |
| 15 | 577 | 707 | 2580 | 860 | 6500 | 1000 | 10100 | 6950 | 845 | 514 | 500 | 530 |
| 16 | 569 | 683 | 2730 | 856 | 4430 | 1060 | 11900 | 9350 | 803 | 506 | 514 | 441 |
| 17 | 604 | 673 | 2490 | 853 | 4040 | 1060 | 12700 | 11400 | 785 | 494 | 520 | 404 |
| 18 | 615 | 655 | 1730 | 850 | 3230 | 1340 | 11900 | 12800 | 776 | 484 | 506 | 395 |
| 19 | 1030 | 656 | 1240 | 843 | 2300 | 2270 | 8640 | 13800 | 760 | 474 | 496 | 441 |
| 20 | 1740 | 677 | 1040 | 979 | 1990 | 2370 | 5330 | 14600 | 803 | 470 | 488 | 436 |
| 21 | 1290 | 870 | 941 | 1300 | 1840 | 1590 | 3590 | 15400 | 980 | 474 | 500 | 419 |
| 22 | 865 | 926 | 1650 | 3950 | 1680 | 1200 | 3050 | 16100 | 996 | 546 | 500 | 400 |
| 23 | 729 | 801 | 3400 | 9190 | 1510 | 1090 | 2790 | 16600 | 1310 | 576 | 490 | 419 |
| 24 | 674 | 806 | 6100 | 12200 | 1400 | 1060 | 2640 | 15300 | 2020 | 520 | 480 | 395 |
| 25 | 697 | 878 | 7770 | 13500 | 1360 | 1030 | 2580 | 11100 | 1830 | 540 | 472 | 386 |
| 26 | 825 | 855 | 9470 | 14800 | 1320 | 1000 | 3310 | 6780 | 1510 | 576 | 464 | 386 |
| 27 | 797 | 782 | 9410 | 15900 | 1280 | 1100 | 6470 | 4720 | 1260 | 570 | 480 | 432 |
| 28 | 721 | 720 | 6580 | 16900 | 1300 | 1360 | 7700 | 4010 | 997 | 654 | 480 | 480 |
| 29 | 672 | 670 | 3710 | 17600 | 1330 | 1840 | 8020 | 3550 | 815 | 813 | 476 | 516 |
| 30 | 665 | 662 | 2480 | 15600 | --- | 3350 | 6640 | 2950 | 723 | 665 | 465 | 670 |
| 31 | 923 | --- | 2370 | 10100 | --- | 4650 | --- | 2610 | --- | 626 | 455 | --- |
| TOTAL | 23284 | 27784 | 77230 | 154054 | 125090 | 43306 | 141300 | 220210 | 35880 | 17646 | 16245 | 13869 |
| MEAN | 751 | 926 | 2491 | 4969 | 4313 | 1397 | 4710 | 7104 | 1196 | 569 | 524 | 462 |
| MAX | 1740 | 2450 | 9470 | 17600 | 13600 | 4650 | 12700 | 16600 | 2440 | 813 | 665 | 676 |
| MIN | 569 | 655 | 621 | 843 | 1280 | 988 | 1230 | 2400 | 723 | 470 | 455 | 386 |
| AC-FT | 46180 | 55110 | 153200 | 305600 | 248100 | 85900 | 280300 | 436800 | 71170 | 35000 | 32220 | 27510 |

CAL YR 1979 TOTAL 1643870 MEAN 4504 MAX 27800 MIN 569 AC-FT 3261000
WTR YR 1980 TOTAL 895898 MEAN 2448 MAX 17600 MIN 386 AC-FT 1777000

## 08065000 TRINITY RIVER NEAR OAKWOOD, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Sediment analyses: December 1976 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1976 to current year.
WATER TEMPERATURES: December 1976 to current year.
SUSPENDED-SEDIMENT DISCHARGE: December 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 991 micromhos Sept. 14, 1977; minimum daily, 204 micromhos June 20, 1977.
WATER TEMPERATURES: Maximum daily, 32.0°C June 11, 1977; minimum daily, 2.0°C Jan. 9, 1977.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,920 mg/L Jan. 22, 1979; minimum daily mean, 20 mg/L Aug. 6, 1977, Oct. 14, 1977, Jan. 4, 1978.
SEDIMENT LOADS: Maximum daily, 43,800 tons Jan. 24, 1980; minimum daily, 34 tons Jan. 4, 1978.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,490 mg/L Dec. 27; minimum daily mean, 37 mg/L Dec. 11.
SEDIMENT LOADS: Maximum daily, 43,800 tons Jan. 24; minimum daily, 46 tons Sept. 6, 7.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | TEMPER-ATURE, WATER (DEG C) | SEDI-MENT, SUS-PENDED (MG/L) | SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) | SED. SUSP. FALL DIAM. % FINER THAN .002 MM | SED. SUSP. FALL DIAM. % FINER THAN .004 MM |
|---|---|---|---|---|---|---|---|
| DEC | | | | | | | |
| 27... | 0900 | 9880 | 12.0 | 1510 | 40300 | 53 | 55 |
| JAN | | | | | | | |
| 22... | 0900 | 2240 | 13.0 | 1380 | 8350 | 64 | 69 |
| FEB | | | | | | | |
| 16... | 1000 | 4420 | 10.0 | 292 | 3490 | 79 | 88 |
| MAY | | | | | | | |
| 12... | 0900 | 3990 | 23.0 | 1310 | 14100 | 83 | 84 |
| 16... | 0900 | 8640 | 22.0 | 983 | 22900 | 66 | 68 |

| DATE | SED. SUSP. FALL DIAM. % FINER THAN .008 MM | SED. SUSP. FALL DIAM. % FINER THAN .016 MM | SED. SUSP. FALL DIAM. % FINER THAN .031 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM |
|---|---|---|---|---|---|---|---|
| DEC | | | | | | | |
| 27... | 59 | 64 | 75 | 92 | 97 | 99 | 100 |
| JAN | | | | | | | |
| 22... | 76 | 80 | 83 | 89 | 95 | 99 | 100 |
| FEB | | | | | | | |
| 16... | 93 | 96 | 97 | 98 | 99 | 99 | 100 |
| MAY | | | | | | | |
| 12... | 90 | 94 | 95 | 99 | 99 | 100 | -- |
| 16... | 75 | 79 | 84 | 94 | 98 | 99 | 100 |

## 08065000 TRINITY RIVER NEAR OAKWOOD, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 501 | 626 | 703 | 388 | 323 | 644 | 434 | 378 | 478 | 616 | | |
| 2 | 604 | 626 | 729 | 391 | 409 | 668 | 437 | 384 | 481 | 674 | | |
| 3 | 606 | 741 | 711 | 380 | 328 | 665 | 585 | 377 | 521 | 673 | | |
| 4 | 602 | 736 | 708 | 451 | 535 | 685 | 540 | 409 | 521 | 673 | | |
| 5 | 657 | 488 | 705 | 519 | 567 | 685 | 541 | 452 | 545 | 758 | | |
| 6 | 655 | 493 | 715 | 518 | 563 | 731 | 539 | 449 | 544 | --- | | |
| 7 | 741 | 451 | 718 | 519 | 558 | 701 | 537 | 574 | 569 | --- | | |
| 8 | 738 | 540 | 716 | 584 | 561 | 698 | 644 | 574 | 572 | --- | | |
| 9 | 716 | 542 | 709 | 587 | 470 | 710 | 645 | 422 | 643 | --- | | |
| 10 | 752 | 542 | 711 | 589 | 480 | 736 | 697 | 424 | 641 | --- | | |
| 11 | 752 | 508 | 737 | 584 | 293 | 732 | 697 | 427 | 695 | --- | | |
| 12 | 754 | 507 | 739 | 581 | 290 | 749 | 350 | 420 | 695 | --- | | |
| 13 | 741 | 654 | 669 | 656 | 298 | 752 | 358 | 462 | 709 | --- | | |
| 14 | 741 | 645 | 671 | 658 | 300 | 752 | 358 | 460 | 712 | --- | | |
| 15 | 741 | 647 | 667 | 683 | 298 | 736 | 354 | 347 | --- | --- | | |
| 16 | 801 | 737 | 670 | 688 | 383 | 719 | 339 | 351 | --- | --- | | |
| 17 | 793 | 737 | 673 | 690 | 393 | 757 | 351 | 319 | --- | 857 | | |
| 18 | 802 | 692 | 678 | 688 | 460 | 763 | 338 | 320 | --- | --- | | |
| 19 | 799 | 728 | 464 | 696 | 457 | 753 | 356 | 300 | --- | --- | | |
| 20 | 799 | 749 | 464 | 696 | 548 | 423 | 356 | 309 | --- | --- | | |
| 21 | 802 | 728 | 467 | 647 | 547 | 421 | 358 | 305 | --- | --- | | |
| 22 | 741 | 639 | 484 | 422 | 605 | 420 | 420 | 319 | --- | --- | | |
| 23 | 741 | 639 | 482 | 419 | 601 | 547 | 418 | 318 | --- | --- | | |
| 24 | 744 | 639 | 366 | 251 | 626 | 738 | 476 | 349 | --- | --- | | |
| 25 | 615 | 639 | 370 | 248 | 646 | 738 | 476 | 358 | --- | --- | | |
| 26 | 582 | 680 | 383 | 261 | 643 | 748 | 493 | 418 | --- | --- | | |
| 27 | 524 | 678 | 376 | 262 | 638 | 750 | 584 | 415 | --- | --- | | |
| 28 | 527 | 679 | 332 | 291 | 638 | 710 | 468 | 424 | --- | --- | | |
| 29 | 625 | 695 | 356 | 295 | 646 | 746 | 293 | 425 | 620 | --- | | |
| 30 | 683 | 703 | 373 | 317 | --- | 728 | 377 | 433 | 616 | --- | | |
| 31 | 686 | --- | 354 | 328 | --- | 724 | --- | 433 | --- | --- | | |
| MEAN | 696 | 637 | 576 | 493 | 486 | 688 | 461 | 399 | 598 | 709 | | |

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24.0 | 18.0 | 9.0 | 9.0 | 6.0 | 12.0 | 16.0 | 20.0 | 27.0 | 31.0 | | |
| 2 | 25.0 | 16.0 | 9.0 | 9.0 | 7.0 | 11.0 | 18.0 | 20.0 | 27.0 | 31.0 | | |
| 3 | 25.0 | 15.0 | 9.0 | 9.0 | 7.0 | 10.0 | 18.0 | 20.0 | 27.0 | 31.0 | | |
| 4 | 25.0 | 15.0 | 9.0 | 8.0 | 7.0 | 12.0 | 18.0 | 21.0 | 27.0 | 31.0 | | |
| 5 | 21.5 | 15.0 | 9.0 | 8.0 | 8.0 | 12.0 | 18.0 | 22.0 | 27.0 | 31.0 | | |
| 6 | 21.0 | 15.0 | 9.0 | 8.0 | 8.0 | 15.0 | 18.0 | 23.0 | 27.0 | --- | | |
| 7 | 24.5 | 15.0 | 9.0 | 8.0 | 9.0 | 17.0 | 18.0 | 23.0 | 28.0 | --- | | |
| 8 | 25.0 | 16.0 | 8.5 | 9.0 | 9.0 | 15.0 | 19.0 | 22.0 | 27.5 | --- | | |
| 9 | 24.0 | 17.5 | 9.0 | 9.0 | 7.0 | 15.0 | 18.0 | 22.0 | 27.0 | --- | | |
| 10 | 21.0 | 17.0 | 10.5 | 10.0 | 7.0 | 18.0 | 19.0 | 21.0 | 26.0 | --- | | |
| 11 | 20.0 | 12.0 | 13.0 | 11.5 | 6.0 | 18.0 | 18.0 | 23.0 | 26.5 | --- | | |
| 12 | 20.5 | 12.0 | 12.0 | 11.0 | 7.0 | 18.0 | 18.0 | 23.0 | 27.0 | --- | | |
| 13 | 20.0 | 11.5 | 8.5 | 11.0 | 7.0 | 19.0 | 14.0 | 23.0 | 27.0 | --- | | |
| 14 | 19.0 | 11.0 | 9.0 | 11.0 | 10.0 | 18.0 | 13.0 | 23.0 | 27.0 | --- | | |
| 15 | --- | 10.5 | 9.0 | 13.0 | 11.0 | 18.0 | 13.0 | 23.0 | --- | --- | | |
| 16 | 21.0 | 11.0 | 10.5 | 14.0 | 10.0 | 18.0 | 14.0 | 22.0 | --- | --- | | |
| 17 | 22.5 | 11.0 | 10.0 | 12.0 | 7.0 | 16.0 | 13.0 | 22.0 | --- | 34.0 | | |
| 18 | 23.0 | 11.0 | 9.0 | 13.0 | 8.0 | 16.0 | 17.0 | 22.0 | --- | --- | | |
| 19 | 23.0 | 13.0 | 9.5 | 13.0 | 9.0 | 16.0 | 18.0 | 22.0 | --- | --- | | |
| 20 | 23.0 | 18.0 | 10.0 | 13.0 | 14.0 | 16.5 | 18.0 | 24.0 | --- | --- | | |
| 21 | 24.0 | 17.0 | 12.0 | 14.0 | 16.0 | 15.0 | 18.0 | 24.0 | --- | --- | | |
| 22 | 23.0 | 14.0 | 14.5 | 13.5 | 17.0 | 15.0 | 19.0 | 24.0 | --- | --- | | |
| 23 | 19.5 | 12.0 | 14.0 | 11.0 | 16.0 | 17.0 | 20.0 | 24.0 | --- | --- | | |
| 24 | 19.0 | 12.0 | 12.0 | 10.0 | 15.0 | 16.0 | 21.0 | 24.0 | --- | --- | | |
| 25 | 18.5 | 13.0 | 11.0 | 10.0 | 12.0 | 16.0 | 21.0 | 25.0 | --- | --- | | |
| 26 | 18.0 | 13.0 | 12.0 | 10.0 | 12.0 | 16.0 | 21.0 | 25.0 | --- | --- | | |
| 27 | 19.0 | 15.0 | 12.0 | 10.0 | 12.5 | 16.0 | 19.0 | 25.0 | --- | --- | | |
| 28 | 20.0 | 13.0 | 12.0 | 9.0 | 13.0 | 16.0 | 18.0 | 26.0 | --- | --- | | |
| 29 | 22.0 | 10.0 | 12.0 | 8.0 | 13.0 | 16.0 | 19.0 | 26.5 | 31.0 | --- | | |
| 30 | 22.0 | 9.0 | 10.5 | 6.0 | --- | 16.0 | 19.0 | 27.0 | 31.0 | --- | | |
| 31 | 22.5 | --- | 9.0 | 5.0 | --- | 16.0 | --- | 27.0 | --- | --- | | |
| MEAN | 22.0 | 13.5 | 10.5 | 10.5 | 10.0 | 15.5 | 17.5 | 23.0 | 27.5 | 31.5 | | |

## 08065000 TRINITY RIVER NEAR OAKWOOD, TX--Continued

### SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | |
| 1 | 771 | 80 | 167 | 1220 | 180 | 593 | 660 | 42 | 75 |
| 2 | 755 | 64 | 130 | 1700 | 205 | 941 | 652 | 42 | 74 |
| 3 | 722 | 66 | 129 | 2450 | 295 | 1950 | 642 | 38 | 66 |
| 4 | 691 | 62 | 116 | 2220 | 265 | 1590 | 631 | 38 | 65 |
| 5 | 681 | 66 | 121 | 1450 | 192 | 752 | 621 | 46 | 77 |
| 6 | 678 | 70 | 128 | 990 | 152 | 406 | 633 | 55 | 94 |
| 7 | 667 | 67 | 121 | 797 | 125 | 269 | 639 | 54 | 93 |
| 8 | 653 | 60 | 106 | 724 | 110 | 215 | 649 | 56 | 98 |
| 9 | 651 | 60 | 105 | 697 | 120 | 226 | 666 | 38 | 68 |
| 10 | 624 | 62 | 104 | 677 | 120 | 219 | 676 | 38 | 69 |
| 11 | 597 | 65 | 105 | 666 | 102 | 183 | 666 | 37 | 67 |
| 12 | 597 | 68 | 110 | 683 | 90 | 166 | 714 | 200 | 386 |
| 13 | 603 | 59 | 96 | 740 | 72 | 144 | 1210 | 850 | 2780 |
| 14 | 601 | 59 | 96 | 749 | 67 | 135 | 2480 | 900 | 6030 |
| 15 | 577 | 58 | 90 | 707 | 54 | 103 | 2580 | 700 | 4880 |
| 16 | 569 | 53 | 81 | 683 | 73 | 135 | 2730 | 250 | 1840 |
| 17 | 604 | 60 | 98 | 673 | 66 | 120 | 2490 | 220 | 1480 |
| 18 | 615 | 55 | 91 | 655 | 66 | 117 | 1730 | 220 | 1030 |
| 19 | 1030 | 80 | 222 | 656 | 66 | 117 | 1240 | 150 | 502 |
| 20 | 1740 | 122 | 573 | 677 | 68 | 124 | 1040 | 120 | 337 |
| 21 | 1290 | 110 | 383 | 870 | 85 | 200 | 941 | 150 | 381 |
| 22 | 865 | 60 | 140 | 926 | 175 | 438 | 1650 | 734 | 3690 |
| 23 | 729 | 55 | 108 | 801 | 90 | 195 | 3400 | 792 | 7410 |
| 24 | 674 | 60 | 109 | 806 | 78 | 170 | 6100 | 1380 | 22800 |
| 25 | 697 | 67 | 126 | 878 | 82 | 194 | 7770 | 1320 | 27700 |
| 26 | 825 | 82 | 183 | 855 | 78 | 180 | 9470 | 1300 | 33200 |
| 27 | 797 | 77 | 166 | 782 | 80 | 169 | 9410 | 1490 | 37800 |
| 28 | 721 | 82 | 160 | 720 | 80 | 156 | 6580 | 1130 | 20600 |
| 29 | 672 | 75 | 136 | 670 | 86 | 156 | 3710 | 582 | 5950 |
| 30 | 665 | 80 | 144 | 662 | 41 | 73 | 2480 | 570 | 3820 |
| 31 | 923 | 90 | 224 | --- | --- | --- | 2370 | 550 | 3520 |
| TOTAL | 23284 | --- | 4668 | 27784 | --- | 10436 | 77230 | --- | 186982 |

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---|---|---|---|---|---|---|---|---|---|
| | | JANUARY | | | FEBRUARY | | | MARCH | |
| 1 | 2160 | 470 | 2740 | 5960 | 151 | 2380 | 1290 | 96 | 334 |
| 2 | 1930 | 450 | 2340 | 4390 | 250 | 2960 | 1200 | 98 | 318 |
| 3 | 1680 | 330 | 1500 | 3050 | 155 | 1280 | 1150 | 94 | 292 |
| 4 | 1490 | 160 | 644 | 2190 | 187 | 1110 | 1120 | 85 | 257 |
| 5 | 1370 | 122 | 451 | 1880 | 135 | 685 | 1090 | 80 | 235 |
| 6 | 1310 | 120 | 424 | 1790 | 150 | 725 | 1060 | 66 | 189 |
| 7 | 1230 | 115 | 382 | 1700 | 172 | 789 | 1030 | 72 | 200 |
| 8 | 1080 | 85 | 248 | 2130 | 233 | 1540 | 1020 | 76 | 209 |
| 9 | 991 | 85 | 227 | 6290 | 791 | 14200 | 1000 | 68 | 184 |
| 10 | 937 | 85 | 215 | 10900 | 801 | 23300 | 994 | 66 | 177 |
| 11 | 928 | 85 | 213 | 12600 | 575 | 19600 | 995 | 64 | 172 |
| 12 | 909 | 80 | 196 | 13600 | 525 | 19300 | 989 | 62 | 166 |
| 13 | 890 | 60 | 144 | 13100 | 340 | 12000 | 1010 | 61 | 166 |
| 14 | 868 | 65 | 152 | 10000 | 300 | 8100 | 988 | 58 | 155 |
| 15 | 860 | 72 | 167 | 6500 | 310 | 5440 | 1000 | 100 | 270 |
| 16 | 856 | 70 | 162 | 4430 | 285 | 3410 | 1060 | 84 | 240 |
| 17 | 853 | 70 | 161 | 4040 | 275 | 3000 | 1060 | 50 | 143 |
| 18 | 850 | 60 | 138 | 3230 | 260 | 2270 | 1340 | 66 | 239 |
| 19 | 843 | 75 | 171 | 2300 | 250 | 1550 | 2270 | 127 | 778 |
| 20 | 979 | 100 | 264 | 1990 | 160 | 860 | 2370 | 460 | 2940 |
| 21 | 1300 | 560 | 1970 | 1840 | 161 | 800 | 1590 | 600 | 2580 |
| 22 | 3950 | 1420 | 15800 | 1680 | 144 | 653 | 1200 | 600 | 1940 |
| 23 | 9190 | 1290 | 31500 | 1510 | 136 | 554 | 1090 | 160 | 471 |
| 24 | 12200 | 1330 | 43800 | 1400 | 140 | 529 | 1060 | 100 | 286 |
| 25 | 13500 | 810 | 29500 | 1360 | 94 | 345 | 1030 | 79 | 220 |
| 26 | 14800 | 560 | 22400 | 1320 | 94 | 335 | 1000 | 70 | 189 |
| 27 | 15900 | 475 | 20400 | 1280 | 87 | 301 | 1100 | 75 | 223 |
| 28 | 16900 | 250 | 11400 | 1300 | 92 | 323 | 1360 | 145 | 532 |
| 29 | 17600 | 225 | 10700 | 1330 | 95 | 341 | 1840 | 213 | 1190 |
| 30 | 15600 | 147 | 6260 | --- | --- | --- | 3350 | 670 | 6260 |
| 31 | 10100 | 131 | 3580 | --- | --- | --- | 4650 | 650 | 8160 |
| TOTAL | 154054 | --- | 208249 | 125090 | --- | 128680 | 43306 | --- | 29715 |

### 08065000 TRINITY RIVER NEAR OAKWOOD, TX--Continued

### SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---|---|---|---|---|---|---|---|---|---|
| | | APRIL | | | MAY | | | JUNE | |
| 1 | 4070 | 430 | 4730 | 4690 | 530 | 6710 | 2440 | 219 | 1440 |
| 2 | 2900 | 480 | 3760 | 3950 | 425 | 4530 | 2100 | 210 | 1190 |
| 3 | 2050 | 340 | 1880 | 3500 | 340 | 3210 | 1830 | 184 | 909 |
| 4 | 1510 | 245 | 999 | 3190 | 475 | 4090 | 1720 | 203 | 943 |
| 5 | 1260 | 222 | 755 | 3970 | 435 | 4660 | 1650 | 150 | 668 |
| 6 | 1520 | 115 | 472 | 4540 | 450 | 5520 | 1460 | 168 | 662 |
| 7 | 1910 | 142 | 732 | 3530 | 530 | 5050 | 1240 | 119 | 398 |
| 8 | 1530 | 245 | 1010 | 2400 | 520 | 3370 | 1050 | 128 | 363 |
| 9 | 1240 | 270 | 904 | 2490 | 475 | 3190 | 913 | 95 | 234 |
| 10 | 1230 | 160 | 531 | 3560 | 600 | 5770 | 897 | 90 | 218 |
| 11 | 1500 | 210 | 850 | 3740 | 1250 | 12600 | 876 | 72 | 170 |
| 12 | 1970 | 510 | 2710 | 3800 | 1160 | 11900 | 835 | 82 | 185 |
| 13 | 4820 | 822 | 11100 | 3870 | 560 | 5850 | 815 | 70 | 154 |
| 14 | 6430 | 874 | 15500 | 4960 | 580 | 7770 | 841 | 68 | 154 |
| 15 | 10100 | 1100 | 29500 | 6950 | 1100 | 20600 | 845 | 80 | 183 |
| 16 | 11900 | 875 | 28100 | 9350 | 1000 | 25200 | 803 | 80 | 173 |
| 17 | 12700 | 570 | 19500 | 11400 | 550 | 16900 | 785 | 78 | 165 |
| 18 | 11900 | 500 | 16100 | 12800 | 575 | 19900 | 776 | 75 | 157 |
| 19 | 8640 | 330 | 7700 | 13800 | 515 | 19200 | 760 | 75 | 154 |
| 20 | 5330 | 325 | 4680 | 14600 | 330 | 13000 | 803 | 85 | 184 |
| 21 | 3590 | 410 | 3970 | 15400 | 300 | 12500 | 980 | 135 | 357 |
| 22 | 3050 | 400 | 3290 | 16100 | 250 | 10900 | 996 | 125 | 336 |
| 23 | 2790 | 370 | 2790 | 16600 | 275 | 12300 | 1310 | 110 | 389 |
| 24 | 2640 | 310 | 2210 | 15300 | 160 | 6610 | 2020 | 185 | 1010 |
| 25 | 2580 | 300 | 2090 | 11100 | 162 | 4680 | 1830 | 200 | 988 |
| 26 | 3310 | 360 | 3220 | 6780 | 341 | 6130 | 1510 | 155 | 632 |
| 27 | 6470 | 749 | 13200 | 4720 | 406 | 5180 | 1260 | 112 | 381 |
| 28 | 7700 | 974 | 20400 | 4010 | 340 | 3680 | 997 | 90 | 242 |
| 29 | 8020 | 970 | 21000 | 3550 | 325 | 3120 | 815 | 87 | 191 |
| 30 | 6640 | 620 | 11100 | 2950 | 325 | 2590 | 723 | 95 | 185 |
| 31 | --- | --- | --- | 2610 | 280 | 1970 | --- | --- | --- |
| TOTAL | 141300 | --- | 234783 | 220210 | --- | 268680 | 35880 | --- | 13415 |

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---|---|---|---|---|---|---|---|---|---|
| | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 682 | 90 | 166 | 665 | 50 | 90 | 465 | 45 | 56 |
| 2 | 655 | 85 | 150 | 622 | 50 | 84 | 480 | 45 | 58 |
| 3 | 638 | 95 | 164 | 644 | 45 | 78 | 460 | 45 | 56 |
| 4 | 618 | 125 | 209 | 595 | 50 | 80 | 421 | 45 | 51 |
| 5 | 605 | 115 | 188 | 595 | 50 | 80 | 410 | 44 | 49 |
| 6 | 602 | 105 | 171 | 560 | 52 | 79 | 400 | 43 | 46 |
| 7 | 587 | 92 | 146 | 526 | 55 | 78 | 410 | 42 | 46 |
| 8 | 564 | 90 | 137 | 524 | 48 | 68 | 450 | 41 | 50 |
| 9 | 545 | 92 | 135 | 544 | 45 | 66 | 480 | 40 | 52 |
| 10 | 540 | 95 | 139 | 534 | 42 | 61 | 461 | 45 | 56 |
| 11 | 534 | 80 | 115 | 534 | 51 | 74 | 441 | 45 | 54 |
| 12 | 530 | 72 | 103 | 560 | 55 | 83 | 500 | 55 | 74 |
| 13 | 524 | 65 | 92 | 540 | 55 | 80 | 665 | 100 | 180 |
| 14 | 520 | 60 | 84 | 516 | 60 | 84 | 676 | 108 | 197 |
| 15 | 514 | 60 | 83 | 500 | 57 | 77 | 530 | 75 | 107 |
| 16 | 506 | 62 | 85 | 514 | 55 | 76 | 441 | 60 | 71 |
| 17 | 494 | 55 | 73 | 520 | 52 | 73 | 404 | 60 | 65 |
| 18 | 484 | 55 | 72 | 506 | 47 | 64 | 395 | 55 | 59 |
| 19 | 474 | 55 | 70 | 496 | 45 | 60 | 441 | 50 | 60 |
| 20 | 470 | 52 | 66 | 488 | 45 | 59 | 436 | 48 | 57 |
| 21 | 474 | 55 | 70 | 500 | 50 | 67 | 419 | 50 | 57 |
| 22 | 546 | 55 | 81 | 500 | 52 | 70 | 400 | 50 | 54 |
| 23 | 576 | 52 | 81 | 490 | 51 | 67 | 419 | 50 | 57 |
| 24 | 520 | 52 | 73 | 480 | 50 | 65 | 395 | 50 | 53 |
| 25 | 540 | 52 | 76 | 472 | 45 | 57 | 386 | 45 | 47 |
| 26 | 576 | 52 | 81 | 464 | 50 | 63 | 386 | 45 | 47 |
| 27 | 570 | 52 | 80 | 480 | 52 | 67 | 432 | 52 | 61 |
| 28 | 654 | 72 | 127 | 480 | 57 | 74 | 480 | 55 | 71 |
| 29 | 813 | 105 | 230 | 476 | 55 | 71 | 516 | 50 | 70 |
| 30 | 665 | 92 | 165 | 465 | 50 | 63 | 670 | 70 | 127 |
| 31 | 626 | 70 | 118 | 455 | 45 | 55 | --- | --- | --- |
| TOTAL | 17646 | --- | 3630 | 16245 | --- | 2213 | 13869 | --- | 2088 |
| YEAR | 895898 | | 1093539 | | | | | | |

## 08065200 UPPER KEECHI CREEK NEAR OAKWOOD, TX

LOCATION.--Lat 31°34'11", long 95°53'17", Leon County, Hydrologic Unit 12030201, at right bank 20 ft (6 m) downstream from bridge on U.S. Highway 79, 1.9 mi (3.1 km) upstream from Missouri Pacific Railroad Co. bridge, 2 mi (3 km) southwest of Oakwood, 11 mi (18 km) upstream from Buffalo Creek, and 21 mi (34 km) upstream from mouth.

DRAINAGE AREA.--150 $mi^2$ (388 $km^2$).

PERIOD OF RECORD.--April 1962 to current year.
Water-quality records: Chemical analyses: June 1962 to April 1964, November 1967 to September 1975.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 240.11 ft (73.186 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No known diversions or regulation above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--18 years (water years 1963-80), 80.2 $ft^3/s$ (2.271 $m^3/s$), 7.26 in/yr (184 mm/yr), 58,100 acre-ft/yr (71.6 $hm^3/yr$).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,000 $ft^3/s$ (680 $m^3/s$) May 16, 1965, gage height, 14.91 ft (4.545 m), and Apr. 25, 1966, from rating curve extended above 5,800 $ft^3/s$ (164 $m^3/s$); maximum gage height, 15.46 ft (4.712 m) Oct. 31, 1974; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, about 21 ft (6.4 m) in 1932, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,250 $ft^3/s$ (35.4 $m^3/s$) Feb. 10 at 1500 hours, gage height, 12.55 ft (3.825 m), no peak above base of 2,000 $ft^3/s$ (56.5 $m^3/s$); no flow for many days.

### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 14 | 72 | 14 | 89 | 59 | 77 | 58 | 27 | 13 | 1.7 | .98 | .00 |
| 2 | 13 | 46 | 14 | 57 | 53 | 72 | 49 | 24 | 12 | 2.5 | .77 | .00 |
| 3 | 11 | 25 | 14 | 51 | 51 | 54 | 46 | 22 | 11 | 2.8 | .55 | .00 |
| 4 | 8.9 | 16 | 14 | 49 | 48 | 49 | 43 | 21 | 9.7 | 2.2 | .49 | .00 |
| 5 | 7.6 | 13 | 15 | 49 | 46 | 47 | 39 | 19 | 8.6 | 1.6 | .42 | .00 |
| 6 | 7.4 | 11 | 15 | 44 | 45 | 43 | 37 | 18 | 7.4 | 1.3 | .37 | .00 |
| 7 | 6.6 | 9.9 | 15 | 40 | 43 | 42 | 38 | 16 | 6.2 | 1.2 | .29 | .01 |
| 8 | 6.4 | 9.7 | 14 | 36 | 96 | 43 | 38 | 23 | 5.4 | 1.0 | .17 | .09 |
| 9 | 6.5 | 10 | 14 | 34 | 353 | 43 | 34 | 34 | 4.7 | .99 | .12 | .42 |
| 10 | 5.9 | 10 | 16 | 33 | 889 | 42 | 30 | 42 | 4.1 | .94 | .13 | .23 |
| 11 | 5.4 | 9.2 | 16 | 35 | 836 | 41 | 29 | 28 | 3.6 | .93 | .17 | .04 |
| 12 | 5.1 | 8.8 | 20 | 33 | 475 | 47 | 83 | 33 | 3.2 | .90 | .26 | .00 |
| 13 | 5.0 | 9.7 | 50 | 30 | 153 | 58 | 550 | 58 | 2.9 | .75 | .25 | .00 |
| 14 | 4.7 | 8.2 | 53 | 29 | 85 | 53 | 660 | 123 | 2.7 | .63 | .12 | .00 |
| 15 | 4.5 | 7.9 | 46 | 29 | 74 | 43 | 727 | 165 | 2.5 | .57 | .31 | .00 |
| 16 | 5.3 | 8.1 | 36 | 34 | 68 | 41 | 258 | 179 | 2.3 | .50 | .65 | .00 |
| 17 | 6.8 | 8.4 | 28 | 37 | 60 | 43 | 127 | 205 | 2.0 | .40 | .31 | .00 |
| 18 | 7.9 | 10 | 24 | 34 | 56 | 40 | 82 | 322 | 1.7 | .37 | .15 | .00 |
| 19 | 12 | 13 | 23 | 32 | 55 | 37 | 68 | 299 | 1.7 | .34 | .06 | .10 |
| 20 | 7.7 | 13 | 23 | 84 | 54 | 37 | 56 | 66 | 4.6 | .34 | .04 | .06 |
| 21 | 6.2 | 71 | 23 | 131 | 52 | 35 | 49 | 43 | 11 | .35 | .03 | .03 |
| 22 | 5.9 | 81 | 70 | 269 | 49 | 32 | 44 | 36 | 9.0 | .50 | .03 | .01 |
| 23 | 7.4 | 60 | 190 | 400 | 45 | 35 | 40 | 31 | 5.9 | .40 | .03 | .01 |
| 24 | 7.1 | 43 | 361 | 660 | 42 | 64 | 35 | 28 | 4.9 | .28 | .03 | .01 |
| 25 | 6.0 | 32 | 412 | 405 | 41 | 48 | 60 | 25 | 4.2 | .39 | .03 | .02 |
| 26 | 5.4 | 25 | 292 | 131 | 38 | 43 | 64 | 24 | 3.3 | .49 | .03 | .07 |
| 27 | 4.9 | 21 | 109 | 68 | 37 | 66 | 50 | 21 | 3.0 | .17 | .04 | .07 |
| 28 | 4.4 | 18 | 59 | 56 | 37 | 195 | 43 | 19 | 2.7 | 3.1 | .06 | .07 |
| 29 | 4.7 | 15 | 91 | 58 | 39 | 187 | 34 | 17 | 2.1 | 2.9 | .29 | .10 |
| 30 | 14 | 14 | 112 | 72 | --- | 131 | 30 | 16 | 1.8 | 2.4 | .07 | .67 |
| 31 | 76 | --- | 132 | 69 | --- | 77 | --- | 15 | --- | 1.5 | .01 | --- |
| TOTAL | 293.7 | 698.9 | 2315 | 3178 | 3979 | 1865 | 3501 | 1999 | 157.2 | 34.44 | 7.26 | 2.01 |
| MEAN | 9.47 | 23.3 | 74.7 | 103 | 137 | 60.2 | 117 | 64.5 | 5.24 | 1.11 | .23 | .067 |
| MAX | 76 | 81 | 412 | 660 | 889 | 195 | 727 | 322 | 13 | 3.1 | .98 | .67 |
| MIN | 4.4 | 7.9 | 14 | 29 | 37 | 32 | 29 | 15 | 1.7 | .17 | .01 | .00 |
| CFSM | .06 | .16 | .50 | .69 | .91 | .40 | .78 | .43 | .04 | .007 | .002 | .000 |
| IN. | .07 | .17 | .57 | .79 | .99 | .46 | .87 | .50 | .04 | .01 | .00 | .00 |
| AC-FT | 583 | 1390 | 4590 | 6300 | 7890 | 3700 | 6940 | 3970 | 312 | 68 | 14 | 4.0 |

CAL YR 1979 TOTAL 40537.44 MEAN 111 MAX 2230 MIN .94 CFSM .74 IN 10.05 AC-FT 80410
WTR YR 1980 TOTAL 18030.51 MEAN 49.3 MAX 889 MIN .00 CFSM .33 IN 4.47 AC-FT 35760

## 08065350 TRINITY RIVER NEAR CROCKETT, TX
(National stream-quality accounting network)

LOCATION.--Lat 31°20'08", long 95°39'27", Leon County, Hydrologic Unit 12030201, on right bank 30 ft (9 m) downstream from bridge on State Highway 7, 7.1 mi (11.4 km) downstream from Upper Keechi Creek, 11.9 mi (19.1 km) west of Crockett, and at mile 265.2 (426.7 km).

DRAINAGE AREA.--13,911 mi² (36,029 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 136.59 ft (41.633 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. For statement regarding regulation by upstream reservoirs, see station 08065000. Flow from 44 mi² (114 km²) of Elkhart Creek basin affected by storage in Houston County Lake near Crockett, capacity 19,500 acre-ft (24.0 hm³). Diversions above station for irrigation, municipal, and industrial uses.

AVERAGE DISCHARGE.--16 years (water years 1965-80), 5,676 ft³/s (160.7 m³/s), 4,112,000 acre-ft/yr (5.07 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,000 ft³/s (2,210 m³/s) May 15, 1969, gage height, 52.24 ft (15,923 m); minimum, 275 ft³/s (7.79 m³/s) Aug. 13, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 56.1 ft (17.10 m) Apr. 30 or May 1, 1942, from information by Texas Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,500 ft³/s (552 m³/s) May 17, gage height, 32.50 ft (9.906 m); minimum daily, 542 ft³/s (15.3 m³/s) Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1110 | 1650 | 873 | 3200 | 12000 | 3020 | 5540 | 6330 | 3050 | 1100 | 820 | 600 |
| 2 | 1070 | 1650 | 815 | 2940 | 6910 | 3380 | 4640 | 5000 | 2820 | 1030 | 820 | 624 |
| 3 | 1050 | 2020 | 812 | 2630 | 4850 | 2400 | 3390 | 4340 | 2440 | 980 | 796 | 623 |
| 4 | 981 | 2500 | 898 | 2250 | 3580 | 2030 | 2520 | 3840 | 2200 | 920 | 807 | 609 |
| 5 | 923 | 2270 | 877 | 1930 | 2840 | 1860 | 1960 | 3680 | 2070 | 880 | 765 | 575 |
| 6 | 893 | 1540 | 855 | 1800 | 2520 | 1750 | 1680 | 4530 | 1960 | 840 | 744 | 542 |
| 7 | 874 | 1200 | 848 | 1710 | 2400 | 1670 | 1960 | 4690 | 1750 | 800 | 710 | 544 |
| 8 | 848 | 1020 | 871 | 1610 | 2830 | 1620 | 2220 | 3700 | 1510 | 780 | 684 | 584 |
| 9 | 841 | 942 | 885 | 1450 | 6700 | 1580 | 1870 | 2730 | 1260 | 760 | 686 | 652 |
| 10 | 830 | 904 | 898 | 1350 | 10800 | 1540 | 1570 | 3120 | 1200 | 750 | 696 | 653 |
| 11 | 819 | 885 | 886 | 1310 | 13300 | 1510 | 1580 | 4090 | 1160 | 740 | 685 | 632 |
| 12 | 812 | 874 | 1090 | 1280 | 15000 | 1510 | 1870 | 4420 | 1130 | 730 | 682 | 609 |
| 13 | 830 | 867 | 1860 | 1230 | 16300 | 1540 | 5410 | 5570 | 1100 | 720 | 681 | 649 |
| 14 | 830 | 904 | 2430 | 1200 | 15500 | 1550 | 8830 | 8090 | 1070 | 710 | 675 | 799 |
| 15 | 812 | 912 | 3000 | 1180 | 11700 | 1530 | 9260 | 10300 | 1040 | 700 | 651 | 862 |
| 16 | 783 | 882 | 2980 | 1250 | 7560 | 1540 | 12100 | 17900 | 1020 | 699 | 664 | 751 |
| 17 | 758 | 850 | 2990 | 1370 | 5400 | 1590 | 14000 | 18700 | 992 | 685 | 664 | 650 |
| 18 | 776 | 839 | 2700 | 1340 | 4810 | 1590 | 14500 | 17200 | 960 | 670 | 640 | 598 |
| 19 | 794 | 835 | 1970 | 1290 | 3800 | 1960 | 13100 | 16500 | 935 | 660 | 631 | 598 |
| 20 | 1060 | 852 | 1520 | 1330 | 3030 | 2830 | 9210 | 16600 | 942 | 660 | 631 | 604 |
| 21 | 1580 | 1210 | 1300 | 2720 | 2730 | 2740 | 5810 | 16900 | 1330 | 680 | 634 | 610 |
| 22 | 1430 | 3400 | 1290 | 4930 | 2530 | 2000 | 4150 | 17300 | 1300 | 700 | 645 | 595 |
| 23 | 1120 | 2720 | 2310 | 9320 | 2320 | 1610 | 3480 | 17600 | 1200 | 750 | 626 | 587 |
| 24 | 923 | 1710 | 5130 | 11500 | 2120 | 1550 | 3190 | 17900 | 1650 | 720 | 613 | 586 |
| 25 | 837 | 1470 | 7180 | 13500 | 1990 | 1550 | 3810 | 17000 | 2280 | 720 | 613 | 580 |
| 26 | 867 | 1320 | 8460 | 15000 | 1920 | 1500 | 3660 | 12600 | 2060 | 750 | 610 | 576 |
| 27 | 942 | 1200 | 9960 | 16500 | 1860 | 1670 | 4610 | 7660 | 1730 | 750 | 609 | 566 |
| 28 | 923 | 1090 | 9830 | 17500 | 1810 | 3040 | 7130 | 5370 | 1490 | 850 | 614 | 615 |
| 29 | 874 | 1010 | 7640 | 18200 | 1870 | 3260 | 8170 | 4560 | 1330 | 900 | 627 | 623 |
| 30 | 837 | 939 | 5020 | 18700 | --- | 3340 | 8130 | 3990 | 1200 | 800 | 612 | 693 |
| 31 | 1220 | --- | 3510 | 17600 | --- | 4640 | --- | 3400 | --- | 852 | 594 | --- |
| TOTAL | 29227 | 40465 | 91888 | 179120 | 170980 | 64900 | 169350 | 285810 | 46179 | 24266 | 20891 | 18836 |
| MEAN | 943 | 1349 | 2964 | 5778 | 5896 | 2094 | 5645 | 9220 | 1539 | 783 | 674 | 628 |
| MAX | 1580 | 3400 | 9960 | 18700 | 16300 | 4640 | 14500 | 18700 | 3050 | 1100 | 820 | 862 |
| MIN | 758 | 835 | 812 | 1180 | 1810 | 1500 | 1570 | 2730 | 935 | 660 | 594 | 542 |
| AC-FT | 57970 | 80260 | 182300 | 355300 | 339100 | 128700 | 335900 | 566900 | 91600 | 48130 | 41440 | 37360 |

CAL YR 1979 TOTAL 2130031 MEAN 5836 MAX 28000 MIN 616 AC-FT 4225000
WTR YR 1980 TOTAL 1141912 MEAN 3120 MAX 18700 MIN 542 AC-FT 2265000

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: [illegible]

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: [illegible]
pH: [illegible]
WATER TEMPERATURES: [illegible]
DISSOLVED OXYGEN: [illegible]

INSTRUMENTATION.--[illegible]

REMARKS.--[illegible]

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: [illegible]
pH: [illegible]
WATER TEMPERATURES: [illegible]
DISSOLVED OXYGEN: [illegible]

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: [illegible]
pH: [illegible]
WATER TEMPERATURES: [illegible]
DISSOLVED OXYGEN: [illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER [illegible] TO SEPTEMBER [illegible]

DATE | TIME | [illegible]

[illegible]

DATE | CALCIUM | [illegible]

[illegible]

## 08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) | SOLIDS, VOLA-TILE, SUS-PENDED (MG/L) | NITRO-GEN, NITRATE TOTAL (MG/L AS N) | NITRO-GEN, NITRITE TOTAL (MG/L AS N) | NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO-GEN, AMMONIA TOTAL (MG/L AS N) | NITRO-GEN, ORGANIC TOTAL (MG/L AS N) | NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS-PHORUS, TOTAL (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | PHENOLS (UG/L) | METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 08... | 43 | 0 | 3.3 | .120 | 3.4 | .100 | .82 | 1.0 | 1.300 | 7.6 | 0 | .10 |
| DEC 19... | 88 | 14 | 3.3 | .100 | 3.4 | 2.500 | 1.8 | 4.3 | 2.800 | 18 | 4 | .10 |
| JAN 30... | 234 | 22 | .79 | .040 | .83 | .250 | 1.1 | 1.3 | .320 | 9.7 | 1 | .00 |
| MAR 12... | 23 | 11 | 3.0 | .170 | 3.2 | .440 | 1.3 | 1.9 | 1.400 | 13 | 2 | .10 |
| APR 22... | 333 | 37 | 1.7 | .000 | 1.7 | .010 | 1.3 | 1.3 | .430 | 12 | 0 | .00 |
| MAY 09... | 322 | 21 | 2.0 | .000 | 2.0 | .010 | 1.3 | 1.3 | .820 | 11 | 2 | -- |
| JUN 20... | 33 | 11 | 2.2 | .040 | 2.2 | .040 | 1.9 | 1.9 | 2.000 | 12 | 3 | .20 |
| JUL 17... | 20 | 7 | 2.6 | .020 | 2.6 | .040 | 1.7 | 1.7 | 2.500 | 14 | 2 | .20 |
| SEP 03... | 15 | 0 | 3.5 | .040 | 3.5 | .040 | 1.7 | 1.7 | 3.200 | 8.7 | 0 | .00 |

| DATE | TIME | ARSENIC DIS-SOLVED (UG/L AS AS) | BARIUM, DIS-SOLVED (UG/L AS BA) | CADMIUM DIS-SOLVED (UG/L AS CD) | CHRO-MIUM, DIS-SOLVED (UG/L AS CR) | COPPER, DIS-SOLVED (UG/L AS CU) | IRON, DIS-SOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|
| JAN 30... | 1145 | 2 | 60 | <1 | 0 | 0 | 100 |
| APR 22... | 1400 | 2 | 50 | <1 | 0 | 6 | <10 |
| JUL 17... | 1740 | 11 | 50 | <1 | 0 | 2 | <10 |
| SEP 03... | 1200 | 12 | 60 | <1 | 0 | 2 | <10 |

| DATE | LEAD, DIS-SOLVED (UG/L AS PB) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) | MERCURY DIS-SOLVED (UG/L AS HG) | SELE-NIUM, DIS-SOLVED (UG/L AS SE) | SILVER, DIS-SOLVED (UG/L AS AG) | ZINC, DIS-SOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|
| JAN 30... | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| APR 22... | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| JUL 17... | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| SEP 03... | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

| DATE | TIME | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
|---|---|---|---|---|---|---|---|---|---|
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

| DATE | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
|---|---|---|---|---|---|---|---|---|---|
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

| DATE | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
|---|---|---|---|---|---|---|---|---|---|
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

## 08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 29227 | 658 | 366 | 28900 | 63 | 4850 | 79 | 6220 | 160 |
| NOV. | 1979 | 60465 | 561 | 301 | 32900 | 46 | 5070 | 63 | 6850 | 150 |
| DEC. | 1979 | 91888 | 439 | 245 | 60700 | 34 | 8530 | 50 | 12300 | 130 |
| JAN. | 1980 | 179120 | 352 | 196 | 94800 | 25 | 12300 | 29 | 18900 | 110 |
| FEB. | 1980 | 170980 | 396 | 221 | 102000 | 30 | 13800 | 44 | 20500 | 120 |
| MAR. | 1980 | 64900 | 503 | 330 | 57800 | 54 | 9400 | 70 | 12300 | 150 |
| APR. | 1980 | 169350 | 392 | 219 | 99900 | 29 | 13200 | 44 | 20000 | 130 |
| MAY | 1980 | 285810 | 253 | 197 | 152000 | 25 | 19200 | 39 | 30000 | 120 |
| JUNE | 1980 | 64179 | 612 | 360 | 62500 | 56 | 8970 | 72 | 9820 | 150 |
| JULY | 1980 | 24266 | 719 | 399 | 26200 | 72 | 4600 | 87 | 5710 | 160 |
| AUG. | 1980 | 20801 | 784 | 461 | 26800 | 83 | 4600 | 98 | 5520 | 160 |
| SEPT | 1980 | 18836 | 794 | 461 | 22600 | 83 | 4230 | 98 | 4980 | 160 |
| TOTAL | | 1161912 | -- | -- | 743000 | -- | 137000 | -- | 152000 | -- |
| WTD. AVG. | | 3120 | 636 | 261 | -- | 35 | -- | 60 | -- | 130 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

### 08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | --- | --- | 330 | 667 | 378 | 508 | 643 | 629 | 501 | 401 | 373 | 381 |
| 2 | --- | --- | 365 | 403 | 330 | 360 | --- | --- | 435 | 436 | 407 | 424 |
| 3 | --- | --- | 425 | 334 | 294 | 481 | --- | --- | 460 | 425 | 415 | 421 |
| 4 | --- | --- | 350 | 376 | 338 | 358 | --- | --- | 363 | 413 | 406 | 408 |
| 5 | --- | --- | 315 | 608 | 375 | 382 | --- | --- | 325 | 431 | 407 | 419 |
| 6 | --- | --- | 335 | 628 | 609 | 623 | --- | --- | 320 | 300 | 432 | 437 |
| 7 | --- | --- | 330 | 642 | 641 | 657 | --- | --- | 320 | 394 | 309 | 356 |
| 8 | --- | --- | 325 | 669 | 660 | 663 | --- | --- | 313 | [illegible] | 324 | 366 |
| 9 | --- | --- | 325 | 662 | 648 | 658 | --- | --- | 325 | 318 | 431 | 476 |
| 10 | --- | --- | 470 | 658 | 645 | 650 | --- | --- | 380 | 404 | 432 | 438 |
| 11 | --- | --- | 473 | 660 | 633 | 656 | --- | --- | 400 | 439 | 446 | 310 |
| 12 | 280 | 263 | 269 | 665 | 633 | 660 | --- | --- | 410 | 363 | 360 | 437 |
| 13 | 303 | 267 | 283 | 677 | 663 | 672 | --- | --- | 370 | [illegible] | 322 | 353 |
| 14 | 290 | 283 | 286 | 697 | 674 | 690 | --- | --- | 380 | [illegible] | [illegible] | [illegible] |
| 15 | 404 | 291 | 316 | 696 | 682 | 690 | --- | --- | 370 | 328 | 236 | 303 |
| 16 | --- | --- | 370 | 682 | 671 | 673 | 361 | 307 | 330 | --- | --- | 300 |
| 17 | --- | --- | 400 | 701 | 676 | 690 | 381 | 280 | [illegible] | --- | --- | 293 |
| 18 | --- | --- | 410 | 719 | 702 | 711 | 310 | 303 | 330 | [illegible] | --- | [illegible] |
| 19 | --- | --- | 460 | 733 | 709 | 719 | [illegible] | [illegible] | [illegible] | [illegible] | --- | [illegible] |
| 20 | --- | --- | 435 | 788 | 736 | 761 | [illegible] | 343 | [illegible] | [illegible] | 293 | 287 |
| 21 | --- | --- | [illegible] | 791 | 638 | 736 | [illegible] | 381 | 343 | [illegible] | [illegible] | [illegible] |
| 22 | --- | --- | [illegible] | [illegible] | 364 | 583 | 617 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | --- | --- | [illegible] | [illegible] | 611 | 612 | 633 | 673 | 632 | [illegible] | [illegible] | [illegible] |
| 24 | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | 660 | 621 | 638 | [illegible] | 619 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | 727 | 639 | 664 | 632 | 572 | 626 | [illegible] | 370 | 638 | [illegible] | [illegible] | [illegible] |
| 27 | 668 | 661 | 666 | 675 | 639 | 670 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | 651 | 661 | 662 | 651 | [illegible] | 625 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | 668 | 661 | 665 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | --- | --- | --- | 796 | 639 | 680 | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| MONTH | 727 | 263 | 463 | 790 | 330 | 606 | [illegible] | 270 | [illegible] | 436 | 236 | [illegible] |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MONTH | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

PH (STANDARD UNITS), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 7.9 | 7.6 | 7.7 | 7.2 | 7.0 | 7.1 | 7.6 | 7.4 | 7.5 | --- | --- | --- |
| 2 | 8.0 | 7.7 | 7.8 | 7.2 | 7.0 | 7.1 | 7.6 | 7.5 | 7.6 | --- | --- | --- |
| 3 | 8.3 | 7.8 | 7.9 | 7.1 | 7.0 | 7.0 | 7.6 | 7.5 | 7.6 | --- | --- | --- |
| 4 | 8.1 | 7.8 | 7.9 | 7.0 | 6.9 | 7.0 | 7.7 | 7.6 | 7.6 | --- | --- | --- |
| 5 | 8.2 | 7.9 | 8.0 | 6.9 | 6.8 | 6.9 | 7.7 | 7.6 | 7.6 | --- | --- | --- |
| 6 | 8.2 | 7.9 | 8.0 | 6.9 | 6.8 | 6.9 | 7.6 | 7.5 | 7.6 | --- | --- | --- |
| 7 | 8.2 | 8.0 | 8.1 | 7.1 | 6.8 | 6.9 | 7.7 | 7.1 | 7.4 | --- | --- | --- |
| 8 | 8.2 | 8.0 | 8.1 | 7.2 | 7.1 | 7.1 | 7.3 | 7.2 | 7.2 | 8.2 | 7.0 | 7.8 |
| 9 | 8.1 | 8.0 | 8.0 | 7.5 | 7.2 | 7.4 | 7.3 | 7.2 | 7.3 | 8.2 | 8.2 | 8.2 |
| 10 | 8.0 | 7.8 | 7.9 | 7.5 | 7.4 | 7.5 | 7.3 | 7.2 | 7.3 | 8.2 | 8.2 | 8.2 |
| 11 | 7.9 | 7.7 | 7.8 | 7.5 | 7.3 | 7.4 | 7.3 | 7.2 | 7.3 | 8.2 | 7.9 | 8.1 |
| 12 | 7.8 | 7.6 | 7.7 | 7.4 | 7.3 | 7.4 | 7.3 | 7.2 | 7.2 | 7.9 | 7.8 | 7.8 |
| 13 | 7.8 | 7.6 | 7.7 | 7.4 | 7.3 | 7.4 | 7.1 | 6.9 | 7.0 | 7.9 | 7.8 | 7.8 |
| 14 | 7.8 | 7.6 | 7.7 | 7.5 | 7.3 | 7.4 | 7.0 | 6.9 | 6.9 | 7.9 | 7.7 | 7.8 |
| 15 | 7.8 | 7.5 | 7.6 | 7.4 | 7.3 | 7.4 | --- | --- | --- | 7.9 | 7.8 | 7.8 |
| 16 | 7.7 | 7.5 | 7.6 | 7.4 | 7.3 | 7.4 | --- | --- | --- | 7.8 | 7.8 | 7.8 |
| 17 | 7.8 | 7.5 | 7.7 | 7.4 | 7.3 | 7.4 | 7.1 | 7.0 | 7.1 | 8.3 | --- | 7.2 |
| 18 | 7.9 | 7.6 | 7.7 | 7.5 | 7.3 | 7.4 | 7.3 | 7.0 | 7.2 | --- | --- | --- |
| 19 | 7.8 | 7.6 | 7.7 | 7.8 | 7.4 | 7.5 | --- | --- | --- | --- | --- | --- |
| 20 | 7.7 | 7.6 | 7.7 | 7.8 | 7.6 | 7.6 | --- | --- | --- | --- | --- | --- |
| 21 | 7.7 | 7.4 | 7.6 | 7.8 | 7.3 | 7.5 | --- | --- | --- | --- | --- | --- |
| 22 | 7.5 | 7.3 | 7.4 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 23 | 7.4 | 7.3 | 7.4 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 24 | 7.4 | 7.3 | 7.3 | 7.2 | 7.1 | 7.1 | --- | --- | --- | --- | --- | --- |
| 25 | 7.4 | 7.3 | 7.3 | 7.2 | 7.1 | 7.1 | --- | --- | --- | --- | --- | --- |
| 26 | 7.5 | 7.3 | 7.4 | 7.2 | 7.1 | 7.2 | --- | --- | --- | --- | --- | --- |
| 27 | 7.4 | 7.2 | 7.3 | 7.3 | 7.1 | 7.2 | --- | --- | --- | --- | --- | --- |
| 28 | 7.4 | 7.3 | 7.3 | 7.4 | 7.2 | 7.2 | --- | --- | --- | --- | --- | --- |
| 29 | 7.5 | 7.3 | 7.4 | 7.3 | 7.2 | 7.3 | --- | --- | --- | 7.8 | 7.3 | 7.6 |
| 30 | 7.5 | 7.4 | 7.4 | 7.8 | 6.8 | 7.3 | --- | --- | --- | 7.8 | 7.3 | [illegible] |
| 31 | 7.6 | 7.1 | 7.2 | --- | --- | --- | --- | --- | --- | 7.8 | 7.3 | [illegible] |
| MONTH | 8.3 | 7.1 | 7.7 | 7.8 | 6.8 | 7.3 | 7.7 | 6.9 | 7.3 | 8.3 | 7.0 | 7.8 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 3 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 4 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 5 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 6 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 7 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 8 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 9 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 10 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 11 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 16 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 17 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 18 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 19 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 20 | --- | --- | --- | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] |
| 21 | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | | | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | | | | [illegible] | [illegible] | [illegible] | | | | [illegible] | [illegible] | [illegible] |
| MONTH | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

## 08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

### PH (STANDARD UNITS), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 7.4 | 7.3 | 7.3 | 7.9 | 7.4 | 7.6 | 7.3 | 7.1 | 7.2 | 7.5 | 7.2 | 7.4 |
| 2 | 7.4 | 7.3 | 7.4 | 7.7 | 7.4 | 7.5 | 8.4 | 7.1 | 7.2 | 7.5 | 7.2 | 7.4 |
| 3 | 7.4 | 7.3 | 7.4 | 7.7 | 7.3 | 7.5 | 8.4 | 7.1 | 7.2 | 7.6 | 7.3 | 7.4 |
| 4 | 7.4 | 7.4 | 7.4 | 7.9 | 7.4 | 7.6 | 7.4 | 7.2 | 7.3 | 7.4 | 7.3 | 7.3 |
| 5 | 7.4 | 7.3 | 7.4 | 7.9 | 7.4 | 7.6 | 7.2 | 7.2 | 7.2 | 7.5 | 7.2 | 7.3 |
| 6 | 7.5 | 7.4 | 7.4 | 7.9 | 7.5 | 7.7 | 7.6 | 7.2 | 7.3 | 7.4 | 7.2 | 7.3 |
| 7 | 7.5 | 7.4 | 7.4 | 7.8 | 7.4 | 7.6 | 7.7 | 7.2 | 7.3 | 7.3 | 7.1 | 7.2 |
| 8 | 7.5 | 7.4 | 7.4 | 8.3 | 7.4 | 7.8 | 7.7 | 7.2 | 7.4 | 7.1 | 7.0 | 7.1 |
| 9 | 7.6 | 7.4 | 7.4 | 7.9 | 7.5 | 7.7 | 7.7 | 7.2 | 7.4 | 7.5 | 7.0 | 7.2 |
| 10 | 7.5 | 7.3 | 7.4 | 7.8 | 7.4 | 7.6 | 7.6 | 7.2 | 7.3 | 7.6 | 7.3 | 7.5 |
| 11 | 8.6 | 7.3 | 7.5 | 7.7 | 7.3 | 7.5 | 7.5 | 7.2 | 7.4 | 7.7 | 7.3 | 7.5 |
| 12 | 7.7 | 7.4 | 7.6 | 7.7 | 7.3 | 7.5 | 7.6 | 7.2 | 7.4 | 7.7 | 7.3 | 7.5 |
| 13 | 8.0 | 7.6 | 7.8 | 7.5 | 7.2 | 7.4 | 7.7 | 7.3 | 7.4 | 7.8 | 7.4 | 7.6 |
| 14 | 8.1 | 7.8 | 7.9 | 7.4 | 7.2 | 7.3 | 7.7 | 7.3 | 7.5 | 7.7 | 7.4 | 7.6 |
| 15 | 8.2 | 7.8 | 8.0 | 7.3 | 7.1 | 7.2 | 7.5 | 7.3 | 7.4 | 7.7 | 7.5 | 7.6 |
| 16 | 8.3 | 7.8 | 8.1 | 7.2 | 7.1 | 7.1 | 7.7 | 7.3 | 7.4 | 7.8 | 7.5 | 7.6 |
| 17 | 8.5 | 8.0 | 8.2 | --- | --- | --- | 7.7 | 7.3 | 7.5 | 7.8 | 7.5 | 7.6 |
| 18 | 8.6 | 8.1 | 8.3 | --- | --- | --- | 7.7 | 7.3 | 7.5 | 7.9 | 7.5 | 7.7 |
| 19 | 8.6 | 8.0 | 8.2 | --- | --- | --- | 7.8 | 7.4 | 7.6 | 7.9 | 7.5 | 7.7 |
| 20 | 8.2 | 7.8 | 8.0 | --- | --- | --- | 7.8 | 7.4 | 7.5 | 7.8 | 7.5 | 7.7 |
| 21 | 7.7 | 7.6 | 7.8 | --- | --- | --- | 7.8 | 7.6 | 7.6 | 8.0 | 7.5 | 7.7 |
| 22 | 7.6 | 7.1 | 7.3 | --- | --- | --- | 7.8 | 7.4 | 7.5 | 7.8 | 7.5 | 7.6 |
| 23 | 7.3 | 7.1 | 7.2 | --- | --- | --- | 7.8 | 7.4 | 7.5 | 7.8 | 7.6 | 7.6 |
| 24 | 7.6 | 7.2 | 7.3 | --- | --- | --- | 7.7 | 7.4 | 7.5 | 7.8 | 7.5 | 7.6 |
| 25 | 7.6 | 7.3 | 7.5 | --- | --- | --- | 7.7 | 7.3 | 7.5 | 7.7 | 7.5 | 7.6 |
| 26 | 7.3 | 7.1 | 7.2 | --- | --- | --- | 7.6 | 7.3 | 7.4 | 7.7 | 7.5 | 7.5 |
| 27 | 7.6 | 7.2 | 7.3 | --- | --- | --- | 7.6 | 7.3 | 7.4 | 7.6 | 7.4 | 7.5 |
| 28 | 7.5 | 7.3 | 7.6 | --- | --- | --- | 7.6 | 7.3 | 7.4 | 7.5 | 7.3 | 7.4 |
| 29 | 7.8 | 7.3 | 7.6 | --- | --- | --- | 7.5 | 7.3 | 7.4 | 7.5 | 7.3 | 7.4 |
| 30 | 7.8 | 7.3 | 7.5 | 7.2 | 7.1 | 7.2 | 7.6 | 7.3 | 7.4 | 7.5 | 7.3 | 7.4 |
| 31 | --- | --- | --- | 8.1 | 7.1 | 7.2 | 7.6 | 7.2 | 7.4 | --- | --- | --- |
| MONTH | 8.6 | 7.1 | 7.6 | 8.3 | 7.1 | 7.5 | 8.4 | 7.1 | 7.4 | 8.0 | 7.0 | 7.5 |

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MONTH | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

### 08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | --- | --- | --- | 16.0 | 12.0 | 14.0 | 17.5 | 16.5 | 17.0 | 20.5 | 19.5 | 20.0 |
| 2 | --- | --- | --- | 11.5 | 8.0 | 9.5 | --- | --- | --- | 22.0 | 20.5 | 21.0 |
| 3 | --- | --- | --- | 11.5 | 9.5 | 10.5 | --- | --- | --- | 22.5 | 21.5 | 22.0 |
| 4 | --- | --- | --- | 13.0 | 11.0 | 12.0 | --- | --- | --- | 23.0 | 22.0 | 22.5 |
| 5 | --- | --- | --- | 14.0 | 12.5 | 13.0 | --- | --- | --- | 23.5 | 22.5 | 23.0 |
| 6 | --- | --- | --- | 14.0 | 12.5 | 13.0 | --- | --- | --- | 23.5 | 23.0 | 23.0 |
| 7 | --- | --- | --- | 15.0 | 14.0 | 14.5 | --- | --- | --- | 24.5 | 23.0 | 23.5 |
| 8 | --- | --- | --- | 15.5 | 15.0 | 15.0 | --- | --- | --- | 24.0 | 23.0 | 23.5 |
| 9 | --- | --- | --- | 16.0 | 14.5 | 15.5 | --- | --- | --- | 23.5 | 22.5 | 23.0 |
| 10 | --- | --- | --- | 17.0 | 13.5 | 16.0 | --- | --- | --- | 23.5 | 22.5 | 23.0 |
| 11 | --- | --- | --- | 17.0 | 16.5 | 16.5 | --- | --- | --- | 24.0 | 23.0 | 23.5 |
| 12 | 7.0 | 6.5 | 6.5 | 18.5 | 16.5 | 17.5 | --- | --- | --- | 24.0 | 22.5 | 23.0 |
| 13 | 7.0 | 6.5 | 6.5 | 18.0 | 17.0 | 17.5 | --- | --- | --- | 22.5 | 22.0 | 22.5 |
| 14 | 8.0 | 7.0 | 7.5 | 17.5 | 16.5 | 17.0 | --- | --- | --- | 22.0 | 21.5 | 21.5 |
| 15 | 15.0 | 8.0 | 9.0 | 17.5 | 16.0 | 17.0 | --- | --- | --- | 22.0 | 21.5 | 21.5 |
| 16 | --- | --- | --- | 18.0 | 17.0 | 17.5 | 15.0 | 14.5 | 15.0 | --- | 20.5 | --- |
| 17 | --- | --- | --- | 18.5 | 17.5 | 18.0 | 15.5 | 14.5 | 15.0 | 22.5 | --- | 21.0 |
| 18 | --- | --- | --- | 18.0 | 16.5 | 17.5 | 17.0 | 15.5 | 16.0 | 22.5 | --- | 20.5 |
| 19 | --- | --- | --- | 17.5 | 16.5 | 17.0 | 18.0 | 16.0 | 17.5 | 23.5 | 22.5 | 23.0 |
| 20 | --- | --- | --- | 18.0 | 16.5 | 17.5 | 19.0 | 17.5 | 18.5 | 24.0 | 23.0 | 23.5 |
| 21 | --- | --- | --- | 18.0 | 16.5 | 17.5 | 20.0 | 18.5 | 19.0 | 24.5 | 24.0 | 24.0 |
| 22 | --- | --- | --- | 18.0 | 16.5 | 17.5 | 20.5 | 19.5 | 20.0 | 25.0 | 24.5 | 24.5 |
| 23 | --- | --- | --- | 18.0 | 17.0 | 17.5 | 21.5 | 20.5 | 21.0 | 25.0 | 24.5 | 24.5 |
| 24 | --- | --- | --- | 18.0 | 16.5 | 17.0 | 22.5 | 21.0 | 21.5 | 25.0 | 24.5 | 25.0 |
| 25 | 15.5 | 14.5 | 15.0 | 17.0 | 16.5 | 17.0 | 22.0 | 20.5 | 21.5 | 25.5 | 24.5 | 25.0 |
| 26 | 15.0 | 13.5 | 14.0 | 17.0 | 16.5 | 16.5 | 21.5 | 20.5 | 21.0 | 26.5 | 25.5 | 26.0 |
| 27 | 15.0 | 13.5 | 14.0 | 16.5 | 15.5 | 16.0 | 21.0 | 20.0 | 20.5 | 27.0 | 26.0 | 26.5 |
| 28 | 15.5 | 13.5 | 14.5 | 18.0 | 15.0 | 16.5 | 20.5 | 19.5 | 20.0 | 27.5 | 26.5 | 27.0 |
| 29 | 16.5 | 15.0 | 15.5 | 18.0 | 17.5 | 18.0 | 20.0 | 19.0 | 20.0 | 27.5 | 26.5 | 27.0 |
| 30 | --- | --- | --- | 18.5 | 17.5 | 18.0 | 20.0 | 19.5 | 19.5 | 28.0 | 27.0 | 27.5 |
| 31 | --- | --- | --- | 18.0 | 17.0 | 17.5 | --- | --- | --- | 28.0 | 27.0 | 27.5 |
| MONTH | 16.5 | 6.5 | 11.5 | 19.0 | 8.0 | 16.0 | 22.5 | 14.5 | 18.0 | 28.0 | 19.5 | 23.5 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | --- | --- | --- | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | --- | --- | --- |
| MONTH | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

## 08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

### OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | |
| 1 | 7.4 | 7.0 | 7.2 | 8.1 | 7.9 | 8.0 | 7.7 | 7.2 | .6 | --- | --- | --- |
| 2 | 7.5 | 7.1 | 7.3 | 8.0 | 7.6 | 7.8 | 7.9 | 7.4 | .6 | --- | --- | --- |
| 3 | 8.0 | 7.2 | 7.5 | 7.7 | 7.3 | 7.6 | 8.1 | 7.5 | .7 | --- | --- | --- |
| 4 | 7.9 | 7.3 | 7.7 | 7.6 | 6.9 | 7.2 | 8.2 | 7.7 | .8 | --- | --- | --- |
| 5 | 8.3 | 7.6 | 8.0 | 7.2 | 6.4 | 6.7 | 8.1 | 7.5 | .7 | --- | --- | --- |
| 6 | 8.3 | 8.0 | 8.2 | 8.6 | 8.4 | 8.5 | 8.0 | 7.4 | [illegible] | --- | --- | --- |
| 7 | 8.4 | 8.1 | 8.2 | 9.4 | 8.5 | 8.8 | 8.3 | 7.2 | [illegible] | --- | --- | --- |
| 8 | 8.4 | 8.0 | 8.2 | 7.9 | 7.4 | 7.7 | 8.4 | 7.7 | [illegible] | 10.3 | 10.2 | 10.3 |
| 9 | 8.0 | 7.8 | 7.9 | 8.3 | 7.8 | 8.0 | 8.6 | 7.7 | [illegible] | 10.2 | 9.9 | 10.1 |
| 10 | 8.8 | 8.4 | 8.6 | 8.6 | 8.3 | 8.5 | 8.3 | 7.6 | [illegible] | 10.0 | 9.7 | 9.8 |
| 11 | 8.7 | 8.3 | 8.5 | 8.8 | 8.6 | 8.7 | 7.9 | 7.3 | [illegible] | 9.6 | 9.2 | 9.4 |
| 12 | 8.7 | 8.1 | 8.3 | 9.0 | 8.8 | 8.9 | 7.7 | 7.3 | [illegible] | 9.3 | 9.1 | 9.2 |
| 13 | 8.7 | 8.1 | 8.3 | 9.3 | 9.0 | 9.2 | 8.3 | 7.8 | [illegible] | 9.3 | 9.0 | 9.2 |
| 14 | 8.8 | 8.2 | 8.6 | 9.5 | 9.3 | 9.4 | 8.4 | 8.3 | [illegible] | 9.2 | 8.9 | 9.1 |
| 15 | 8.7 | 8.1 | 8.3 | 9.6 | 9.3 | [illegible] | --- | --- | -- | 8.9 | 8.7 | 8.8 |
| 16 | 8.3 | 8.1 | 8.2 | 8.6 | 7.9 | 8.2 | --- | --- | -- | 8.7 | 8.6 | 8.6 |
| 17 | 8.6 | 8.0 | 8.2 | 8.5 | 7.8 | 8.0 | 8.2 | 8.2 | [illegible] | 8.0 | 7.9 | 8.0 |
| 18 | 8.5 | 7.9 | 8.2 | 8.2 | 7.7 | 7.9 | 8.2 | 8.0 | [illegible] | 7.9 | 7.9 | 7.9 |
| 19 | 8.1 | 7.8 | 7.9 | 8.0 | 7.3 | 7.6 | 8.8 | 8.6 | [illegible] | --- | --- | --- |
| 20 | 7.8 | 7.5 | 7.6 | 7.5 | 6.7 | 7.1 | 8.8 | 8.7 | [illegible] | --- | --- | --- |
| 21 | 7.6 | 6.3 | 7.0 | 8.7 | 8.5 | 8.6 | 8.7 | 8.5 | [illegible] | --- | --- | --- |
| 22 | [illegible] | [illegible] | [illegible] | --- | --- | --- | 8.9 | 8.6 | [illegible] | --- | --- | --- |
| 23 | [illegible] | [illegible] | [illegible] | --- | --- | --- | 8.7 | 8.6 | [illegible] | --- | --- | --- |
| 24 | [illegible] | [illegible] | [illegible] | 7.8 | 6.9 | 7.0 | --- | --- | -- | --- | --- | --- |
| 25 | [illegible] | [illegible] | [illegible] | 7.3 | 6.8 | 7.1 | --- | --- | -- | --- | --- | --- |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | --- | --- | -- | --- | --- | --- |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | --- | --- | -- | --- | --- | --- |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | --- | --- | -- | --- | --- | --- |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | --- | --- | -- | 8.8 | 8.6 | 8.8 |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | --- | --- | -- | 8.8 | 8.6 | 8.7 |
| 31 | [illegible] | [illegible] | [illegible] | --- | --- | --- | --- | --- | -- | 8.8 | 8.8 | 8.8 |
| MONTH | 8.8 | 5.8 | 7.8 | 9.6 | 6.4 | [illegible] | [illegible] | 7.2 | [illegible] | 10.3 | 7.9 | 9.0 |

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | |
| 1 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | | | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | | | | [illegible] | [illegible] | [illegible] | | | | [illegible] | [illegible] | [illegible] |
| MONTH | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | |
| 1 | 6.2 | 5.8 | 6.0 | 10.1 | 7.3 | 8.6 | 5.6 | 4.0 | 4.7 | 7.1 | 5.1 | 5.9 |
| 2 | 6.4 | 6.2 | 6.3 | 9.1 | 7.1 | 7.9 | 5.7 | 4.1 | 4.7 | 7.1 | 5.0 | 5.9 |
| 3 | 6.5 | 6.2 | 6.4 | 9.0 | 6.7 | 7.6 | 6.3 | 4.2 | 5.0 | 7.1 | 5.0 | 5.9 |
| 4 | 6.5 | 6.3 | 6.4 | 9.8 | --- | --- | 6.0 | 4.3 | 5.1 | 7.8 | 5.0 | 5.5 |
| 5 | 6.6 | 6.1 | 6.4 | 10.1 | 6.6 | 8.1 | 5.1 | 4.8 | 4.9 | 8.4 | 3.1 | 5.2 |
| 6 | 6.9 | 6.3 | 6.6 | 10.3 | 7.0 | 8.3 | 7.2 | 5.0 | 5.9 | 7.8 | 6.0 | 6.8 |
| 7 | 7.0 | 6.3 | 6.7 | 9.7 | 7.0 | 8.0 | 7.6 | 4.9 | 5.9 | 7.2 | 5.8 | 6.4 |
| 8 | 7.0 | 6.5 | 6.7 | 13.6 | 6.7 | 9.9 | 7.9 | 4.8 | 6.1 | 6.6 | --- | --- |
| 9 | 6.7 | 6.2 | 6.4 | 11.3 | 7.4 | 9.1 | 7.9 | --- | --- | 7.5 | 5.2 | 6.0 |
| 10 | 6.8 | 5.9 | 6.3 | 10.7 | 6.9 | 8.5 | 7.6 | 5.0 | 6.1 | 7.2 | 5.7 | 6.3 |
| 11 | 7.7 | 6.0 | 6.7 | 10.2 | 6.3 | 7.9 | 7.5 | 5.1 | 6.1 | --- | --- | 6.6 |
| 12 | 8.5 | 6.5 | 7.5 | 10.5 | 6.0 | 7.9 | 8.0 | 5.1 | 6.2 | --- | 6.5 | 7.9 |
| 13 | 10.7 | 7.8 | 9.1 | 9.4 | 5.9 | 7.3 | 8.0 | 5.1 | 6.3 | 8.5 | 6.0 | 7.0 |
| 14 | 11.5 | 8.6 | 10.0 | 9.2 | 5.3 | 6.9 | 8.1 | 5.1 | 6.3 | 7.9 | 6.0 | 6.8 |
| 15 | 11.6 | 8.8 | 10.2 | 8.2 | 5.3 | 6.5 | 7.0 | --- | 5.9 | 7.7 | 6.2 | 6.8 |
| 16 | 12.2 | 8.7 | 10.6 | 7.8 | 5.1 | 5.8 | 7.9 | 5.5 | 6.6 | 8.0 | 6.1 | 6.9 |
| 17 | 14.3 | 9.8 | 11.8 | --- | --- | --- | 8.6 | 5.8 | 6.9 | 8.6 | 6.1 | 7.1 |
| 18 | 13.2 | 9.8 | 11.6 | --- | --- | --- | 8.5 | 5.9 | 7.0 | 8.8 | 6.1 | 7.1 |
| 19 | 12.6 | 8.9 | 10.5 | --- | --- | --- | 9.1 | 6.1 | 7.3 | 8.7 | 6.3 | 7.3 |
| 20 | 10.3 | 8.3 | 9.3 | --- | --- | --- | 8.9 | 6.1 | 7.2 | 8.2 | 6.2 | 7.0 |
| 21 | 8.1 | 6.5 | 7.6 | --- | --- | --- | 8.8 | 5.9 | 7.1 | 9.0 | 6.2 | 7.5 |
| 22 | 6.5 | 3.9 | 5.5 | --- | --- | --- | 8.6 | 5.8 | 6.9 | 8.9 | 6.1 | 7.3 |
| 23 | 5.7 | 4.0 | 4.9 | --- | --- | --- | 8.5 | 5.7 | 6.9 | 8.6 | 5.9 | 7.0 |
| 24 | 6.3 | 4.9 | 5.3 | --- | --- | --- | 8.1 | 5.6 | 6.8 | 8.3 | 6.0 | 7.0 |
| 25 | 5.7 | 4.8 | 5.2 | --- | --- | --- | 8.0 | 5.5 | 6.6 | 7.9 | 6.0 | 6.7 |
| 26 | 5.1 | 3.6 | 4.5 | --- | --- | --- | 7.8 | 5.5 | 6.5 | 7.6 | 6.0 | 6.6 |
| 27 | 6.0 | 4.7 | 5.2 | --- | --- | --- | 7.8 | 5.3 | 6.3 | 7.7 | 6.1 | 6.9 |
| 28 | 6.8 | 5.0 | 5.8 | --- | --- | --- | 7.6 | 5.3 | 6.3 | 7.6 | 6.2 | 6.8 |
| 29 | 7.9 | 5.7 | 6.7 | --- | --- | --- | 7.6 | 5.6 | 6.1 | 7.8 | 6.2 | 6.9 |
| 30 | 8.5 | 6.1 | 7.6 | 6.3 | 6.0 | 6.2 | 8.1 | 5.8 | 6.8 | 7.6 | 6.3 | 6.9 |
| 31 | --- | --- | --- | 5.8 | 3.8 | 4.7 | 7.6 | 5.2 | 6.2 | --- | --- | --- |
| MONTH | 14.3 | 3.6 | 7.3 | 13.6 | 3.8 | 7.3 | 9.1 | 4.0 | 6.2 | 9.0 | 3.1 | 6.7 |

## 08065800 BEDIAS CREEK NEAR MADISONVILLE, TX

LOCATION.--Lat 30°53'03", long 95°46'39", Madison-Walker County line, Hydrologic Unit 12030202, on right bank at downstream side of bridge on U.S. Highways 75 and 190, 0.5 mi (0.8 km) upstream from Interstate Highway 45, 1.5 mi (2.4 km) downstream from Caney Creek, and 9.5 mi (15.3 km) southeast of Madisonville.

DRAINAGE AREA.--321 mi² (831 km²).

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 150.00 ft (45.720 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No diversion above station. Flow is affected at times by discharge from the flood-detention pools of two floodwater-retarding structures with combined detention capacity of 834 acre-ft (1.03 hm³). These structures control runoff from 1.32 mi² (3.42 km²) in the Town Branch drainage basin. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--13 years, 226 ft³/s (6.400 m³/s), 9.56 in/yr (243 mm/yr), 163,700 acre-ft/yr (202 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,800 ft³/s (957 m³/s) Sept. 14, 1974, gage height, 25.07 ft (7.641 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1910, 34 ft (10.4 m) in May 1922 (discharge unknown), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,400 ft³/s (96.3 m³/s) and maximum (*):

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| Jan. 23 | 1600 | 4,880 | 138 | 18.91 | 5.764 |
| Mar. 28 | 2100 | *6,700 | 190 | 19.28 | 5.877 |
| May 17 | 0300 | 6,070 | 172 | 19.03 | 5.800 |

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

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## 08066100 WHITE ROCK CREEK NEAR TRINITY, TX

**LOCATION.**--Lat 31°03'06", long 95°22'40", Trinity County, Hydrologic Unit 12030202, on right bank 3.9 mi (6.3 km) upstream from Little White Rock Creek, 4.1 mi (6.6 km) upstream from Tantabogue Creek, 7.3 mi (11.7 km) north of Trinity, and 16.1 mi (25.9 km) upstream from mouth.

**DRAINAGE AREA.**--222 mi² (575 km²). Prior to June 1974, 228 mi² (591 km²).

**PERIOD OF RECORD.**--December 1965 to current year. Peak discharge, supplemental peak discharges, and discharge measurements only October 1971 to May 1974 (low stages affected by storage in Livingston Reservoir).

**GAGE.**--Water-stage recorder and crest-stage gage. Datum of gage is 124.30 ft (37.887 m) National Geodetic Vertical Datum of 1929. Prior to June 19, 1974, at site 1.9 mi (3.1 km) downstream at same datum.

**REMARKS.**--Records fair. No known diversions. Several observations of water temperature were made during the year.

**AVERAGE DISCHARGE.**--11 years (water years 1967-71, 1975-80), 113 ft³/s (3.200 m³/s), 6.92 in/yr (176 mm/yr), 81,870 acre-ft/yr (101 hm³/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 20,800 ft³/s (589 m³/s) Apr. 21, 1979, gage height, 33.87 ft (10.324 m), from rating curve extended above 6,000 ft³/s (170 m³/s) on basis of slope-area measurement of peak flow on that date; no flow at times.

**EXTREMES FOR CURRENT YEAR.**--Peak discharges above base of 1,900 ft³/s (53.8 m³/s) and maximum (*):

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|
| Jan. 23 | 1200 | 5,990 | 170 | 21.99 | 6.703 |
| Mar. 28 | unknown | 4,500 | 127 | unknown | -- |
| May 16 | 2100 | *10,500 | 297 | 26.35 | 8.031 |

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 7 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

[illegible]

## 08066170 KICKAPOO CREEK NEAR ONALASKA, TX

LOCATION.--Lat 30°54'25", long 95°05'18", Polk County, Hydrologic Unit 12030202, on right bank 114 ft (35 m) downstream from old bridge site, 1.2 mi (1.9 km) downstream from Magnolia Creek, 6.2 mi (10.0 km) upstream from Rocky Creek, 7.3 mi (11.7 km) northeast of Onalaska, and 15.9 mi (25.6 km) upstream from mouth.

DRAINAGE AREA.--57.0 mi² (147.6 km²).

PERIOD OF RECORD.--December 1965 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 139.85 ft (42.626 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. No diversion above station. Low flow is sustained by sewage effluent. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--14 years (water years 1967-80), 43.8 ft³/s (1.240 m³/s), 10.43 in/yr (265 mm/yr), 31,730 acre-ft/yr (39.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s (453 m³/s) June 13, 1973, gage height, 26.0 ft (7.92 m); minimum, 0.01 ft³/s (0.0003 m³/s) July 19, 20, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s (70.8 m³/s) and maximum (*):

| Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft³/s) | Discharge (m³/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dec. 12 | 1600 | 2,790 | 79.0 | 12.80 | 3.901 | Mar. 27 | 1700 | 7,060 | 200 | 18.60 | 5.669 |
| Feb. 9 | 1000 | 4,840 | 137 | 15.90 | 4.846 | May 15 | 2200 | *7,400 | 210 | 18.96 | 5.779 |

Minimum discharge, 0.32 ft³/s (0.009 m³/s) Aug. 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.8 | 16 | 4.3 | 13 | 12 | 30 | 26 | 6.6 | 3.1 | .66 | .61 | .69 |
| 2 | 2.6 | 7.3 | 4.3 | 16 | 11 | 21 | 26 | 7.6 | 4.6 | .79 | .66 | 1.2 |
| 3 | 2.0 | 4.9 | 4.1 | 60 | 12 | 20 | 23 | 7.0 | 4.3 | .73 | .66 | 1.1 |
| 4 | 2.7 | 3.8 | 3.8 | 20 | 12 | 16 | 22 | 6.6 | 3.7 | .66 | .66 | 1.0 |
| 5 | 1.6 | 3.6 | 3.7 | 16 | 11 | 13 | 16 | 6.1 | 3.6 | .66 | .66 | .66 |
| 6 | 2.3 | 3.2 | 3.6 | 13 | 12 | 13 | 13 | 5.7 | 2.9 | .66 | .66 | 1.1 |
| 7 | 2.2 | 2.9 | 3.4 | 11 | 16 | 11 | 12 | 5.6 | 2.7 | .57 | .66 | 1.3 |
| 8 | 2.2 | 2.9 | 3.3 | 9.1 | 20 | 10 | 11 | 62 | 2.6 | .53 | .66 | 1.9 |
| 9 | 2.2 | 2.9 | 3.2 | 8.2 | 1470 | 9.2 | 8.8 | 20 | 2.3 | .60 | .66 | 3.6 |
| 10 | 2.0 | 3.1 | 3.0 | 7.8 | 179 | 8.7 | 8.3 | 9.3 | 2.3 | .71 | .62 | 7.6 |
| 11 | 1.8 | 3.1 | 2.8 | 8.8 | 88 | 8.6 | 8.0 | 7.6 | 2.2 | .71 | 3.7 | 1.9 |
| 12 | 1.8 | 2.9 | 1170 | 7.3 | 30 | 8.3 | 12 | 6.8 | 1.9 | .71 | 2.6 | 1.3 |
| 13 | 1.8 | 2.3 | 230 | 6.7 | 26 | 7.7 | 868 | 11 | 1.7 | .71 | 7.6 | 1.6 |
| 14 | 1.8 | 2.2 | 80 | 6.0 | 27 | 7.3 | 155 | 202 | 1.3 | .71 | .67 | 1.3 |
| 15 | 1.8 | 2.0 | 67 | 6.3 | 24 | 7.6 | 30 | 2380 | 1.3 | .69 | 1.0 | 1.6 |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 19 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 20 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 21 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 23 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 24 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 30 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 31 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| TOTAL | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MEAN | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MAX | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| MIN | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| CFSM | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| IN. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| AC-FT | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

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## 08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX

LOCATION.--Lat 30°38'00", long 95°00'36", Polk-San Jacinto County line, Hydrologic Unit 12030202, on upstream wingwall at left end of gated spillway at Livingston Dam on Trinity River, 4.4 mi (7.1 km) northwest of Goodrich, 7 mi (11 km) southwest of Livingston, 11.7 mi (18.8 km) upstream from Long King Creek, and at mile 129.2 (207.19 km).

DRAINAGE AREA.--16,583 mi² (42,950 km²).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Trinity River Authority). Prior to Feb. 26, 1969, temporary nonrecording gages at site about 200 ft (61 m) upstream and at same datum.

REMARKS.--The reservoir is formed by an earthfill dam 14,400 ft (4,390 m) long. The dam was completed Sept. 20, 1968, and deliberate impoundment began June 26, 1969. The reservoir is operated for industrial water supply in the Houston metropolitan area. The spillway has twelve 40- by 35-foot (12 by 11 m) tainter gates located near the left end of dam. Low-flow releases may be made through multi-gated inlet tower. There are five gated openings at various elevations located in the tower, and all discharge into a 10-foot-diameter (3 m) concrete conduit through the dam. Flow is affected at times by discharge from the flood-detention pools of 247 floodwater-retarding structures with a combined detention capacity of 183,400 acre-ft (226 hm³). These structures control runoff from 612 mi² (1,585 km²) in the Richland, Chambers, Tehuacana, and Bedias Creeks drainage basins. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

| | Elevation (feet) | Capacity (acre-feet) |
|---|---|---|
| Top of dam | 145.0 | - |
| Design flood | 135.0 | 2,136,000 |
| Top of tainter gates | 134.0 | 2,046,000 |
| Top of conservation pool | 131.0 | 1,788,000 |
| Crest of spillway (sill of tainter gates) | 99.0 | 157,900 |
| Lowest gated outlet (invert) | 58.0 | 122 |

COOPERATION.--The capacity table, furnished by the Trinity River Authority, is based on Geological Survey topographic maps.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,926,000 acre-ft (2.37 km³) May 19, 1980, elevation, 132.63 ft (40.426 m); minimum since conservation pool capacity was reached on Nov. 2, 1971, 1,433,000 acre-ft (1.80 km³) Nov. 19, 1978, elevation, 128.19 ft (38.663 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,926,000 acre-ft (2.37 km³) May 19, elevation, 132.63 ft (40.426 m); minimum, 1,491,000 acre-ft (1.84 km³) Sept. 28, 29, elevation, 127.22 ft (38.777 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

| | | | |
|---|---|---|---|
| 127.0 | 1,476,000 | 131.5 | 1,830,000 |
| 128.5 | 1,580,000 | 132.7 | 1,932,000 |
| 130.0 | 1,717,000 | | |

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
[illegible]

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 2 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
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| 8 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 9 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 10 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 11 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 13 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 14 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 18 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
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| 22 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
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| 25 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 26 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 27 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 28 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 29 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
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## TRINITY RIVER BASIN

## 08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1969 to current year.

### [illegible] LIVINGSTON RESERVOIR SITE AC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | | |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| SEP | | | | | | | | | | |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

| DATE | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM AD-SORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| SEP | | | | | | | | | |
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| DATE | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, AMMONIA TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, TOTAL RECOVERABLE (UG/L AS FE) | MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
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| SEP | | | | | | | | | |
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## LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

### 304521095075501 LIVINGSTON RESERVOIR SITE DC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| SEP | | | | | | | | | |
| 04... | 1112 | 1.0 | 360 | 8.3 | 30.0 | .70 | 8.1 | 105 | 110 |
| 04... | 1114 | 10 | 360 | 8.2 | 29.5 | -- | 6.7 | 86 | -- |
| 04... | 1116 | 20 | 380 | 7.6 | 29.0 | -- | 3.6 | 46 | -- |
| 04... | 1118 | 30 | 410 | 7.5 | 29.0 | -- | 2.6 | 33 | -- |
| 04... | 1120 | 40 | 420 | 7.4 | 29.0 | -- | 2.3 | 29 | -- |
| 04... | 1122 | 50 | 420 | 7.4 | 29.0 | -- | 2.6 | 33 | -- |
| 04... | 1124 | 59 | 420 | 7.3 | 29.0 | -- | 1.8 | 23 | 120 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| SEP | | | | | | | | | |
| 04... | 8 | 36 | 4.0 | 26 | 1.1 | 5.0 | 120 | 0 | 35 |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | 9 | 42 | 4.7 | 35 | 1.4 | 5.4 | 140 | 0 | 38 |

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| SEP | | | | | | | | | |
| 04... | 30 | 7.9 | 203 | .00 | 1.1 | 1.1 | .320 | <10 | 2 |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | .00 | 1.2 | 1.2 | .320 | 20 | 0 |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | .00 | 1.1 | 1.1 | .330 | 30 | 10 |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | 39 | 7.8 | 241 | .00 | 1.2 | 1.2 | .350 | <10 | 20 |

### 304520095075101 LIVINGSTON RESERVOIR SITE DL

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| SEP | | | | | | | |
| 04... | 1145 | 1.0 | 360 | 8.2 | 30.0 | 7.5 | 97 |
| 04... | 1147 | 10 | 360 | 8.1 | 29.5 | 6.6 | 85 |
| 04... | 1149 | 23 | 360 | 7.2 | 29.0 | 2.1 | 27 |

## LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

### 304659095052001 LIVINGSTON RESERVOIR SITE EC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SLCCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 10... | 1000 | 1.0 | 341 | 7.6 | 11.0 | -- | 9.0 |
| 10... | 1002 | 10 | 341 | 7.6 | 11.0 | -- | 8.9 |
| 10... | 1004 | 20 | 341 | 7.6 | 11.0 | -- | 8.9 |
| 10... | 1006 | 30 | 341 | 7.6 | 11.0 | -- | 8.9 |
| 10... | 1008 | 40 | 341 | 7.6 | 11.0 | -- | 8.9 |
| SEP | | | | | | | |
| 04... | 1035 | 1.0 | 370 | 8.2 | 29.5 | .72 | 7.1 |
| 04... | 1038 | 10 | 370 | 8.2 | 29.5 | -- | 6.7 |
| 04... | 1040 | 20 | 370 | 8.1 | 29.5 | -- | 6.4 |
| 04... | 1042 | 32 | 380 | 7.4 | 29.5 | -- | 2.3 |

| DATE | OXYGEN, DISSOLVED (PERCENT SATURATION) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 10... | 81 | .40 | 1.3 | 1.7 | .190 | 130 | 10 |
| 10... | 80 | -- | -- | -- | -- | -- | -- |
| 10... | 80 | -- | -- | -- | -- | -- | -- |
| 10... | 80 | -- | -- | -- | -- | -- | -- |
| 10... | 80 | .10 | .30 | .40 | .230 | 30 | 0 |
| SEP | | | | | | | |
| 04... | 91 | .00 | 1.1 | 1.1 | .320 | 10 | 0 |
| 04... | 86 | -- | -- | -- | -- | -- | -- |
| 04... | 82 | -- | -- | -- | -- | -- | -- |
| 04... | 29 | .00 | 1.1 | 1.1 | .360 | 30 | 0 |

### 304843095104001 LIVINGSTON RESERVOIR SITE FC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| 04... | 1530 | 1.0 | 410 | 8.3 | 30.5 | 8.1 | 107 |
| 04... | 1532 | 10 | 410 | 8.2 | 30.0 | 7.2 | 94 |
| 04... | 1534 | 20 | 410 | 7.9 | 29.5 | 5.1 | 65 |
| 04... | 1536 | 30 | 424 | 7.6 | 29.0 | 3.2 | 41 |
| 04... | 1538 | 40 | 450 | 7.3 | 29.0 | 1.4 | 18 |
| 04... | 1540 | 52 | 470 | 7.2 | 29.0 | .3 | 4 |

## LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

### 305411095144901 LIVINGSTON RESERVOIR SITE GC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 11... | 1635 | 1.0 | 360 | 7.4 | 11.5 | .15 | 7.7 | 70 | 95 |
| 11... | 1637 | 10 | 360 | 7.4 | 11.0 | -- | 7.3 | 66 | -- |
| 11... | 1639 | 20 | 360 | 7.4 | 11.0 | -- | 7.2 | 65 | -- |
| 11... | 1641 | 30 | 360 | 7.4 | 11.0 | -- | 7.2 | 65 | -- |
| 11... | 1643 | 40 | 360 | 7.4 | 11.0 | -- | 7.3 | 66 | -- |
| 11... | 1645 | 55 | 360 | 7.4 | 11.0 | -- | 7.3 | 66 | 100 |
| SEP | | | | | | | | | |
| 04... | 1700 | 1.0 | 488 | 8.3 | 30.5 | .34 | 8.5 | 110 | 130 |
| 04... | 1702 | 10 | 488 | 8.1 | 30.0 | -- | 7.1 | 92 | -- |
| 04... | 1704 | 20 | 570 | 7.9 | 30.0 | -- | 4.0 | 52 | -- |
| 04... | 1706 | 30 | 625 | 7.5 | 29.5 | -- | 1.6 | 21 | -- |
| 04... | 1708 | 40 | 726 | 7.4 | 29.0 | -- | .1 | 1 | -- |
| 04... | 1710 | 51 | 726 | 7.4 | 29.0 | -- | .1 | 1 | 160 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 11... | 27 | 31 | 4.3 | 26 | 1.2 | 6.4 | 83 | 0 | 46 |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | 25 | 33 | 4.3 | 26 | 1.1 | 6.2 | 91 | 0 | 47 |
| SEP | | | | | | | | | |
| 04... | 11 | 45 | 5.3 | 44 | 1.7 | 6.8 | 150 | 0 | 48 |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | 13 | 54 | 6.2 | 83 | 2.9 | 9.2 | 180 | 0 | 80 |

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 11... | 30 | 10 | 195 | 1.1 | 1.4 | 2.5 | .390 | 70 | 30 |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | -- | -- | -- | .32 | 1.7 | 2.0 | -- | 110 | 30 |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | 32 | 11 | 205 | .56 | 1.5 | 2.1 | .440 | 340 | 50 |
| SEP | | | | | | | | | |
| 04... | 48 | 6.8 | 278 | .00 | 1.3 | 1.3 | .340 | 50 | 9 |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | .14 | 1.3 | 1.4 | .450 | 20 | 10 |
| 04... | -- | -- | -- | .16 | 1.2 | 1.4 | .490 | 20 | 10 |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | 82 | 9.0 | 412 | .22 | 1.5 | 1.7 | .700 | <10 | 20 |

## LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

### 305447095161401 LIVINGSTON RESERVOIR SITE HC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 11... | 1005 | 1.0 | 288 | 7.2 | 11.5 | .15 | 8.4 |
| 11... | 1007 | 10 | 288 | 7.2 | 11.5 | -- | 8.2 |
| 11... | 1009 | 20 | 293 | 7.2 | 11.5 | -- | 8.1 |
| 11... | 1011 | 30 | 313 | 7.3 | 11.5 | -- | 7.7 |
| 11... | 1013 | 40 | 320 | 7.3 | 11.5 | -- | 7.5 |
| 11... | 1015 | 45 | 332 | 7.3 | 11.5 | -- | 7.6 |
| SEP | | | | | | | |
| 04... | 1730 | 1.0 | 470 | 8.2 | 30.0 | .46 | 9.1 |
| 04... | 1732 | 10 | 470 | 8.0 | 30.0 | -- | 7.9 |
| 04... | 1734 | 20 | 500 | 7.3 | 29.0 | -- | 3.1 |
| 04... | 1736 | 30 | 480 | 7.1 | 29.0 | -- | 2.2 |
| 04... | 1738 | 36 | 480 | 7.1 | 29.0 | -- | 2.1 |

| DATE | OXYGEN, DISSOLVED (PERCENT SATURATION) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 11... | 76 | .47 | 1.4 | 1.9 | .190 | 170 | 20 |
| 11... | 75 | -- | -- | -- | -- | -- | -- |
| 11... | 74 | -- | -- | -- | -- | -- | -- |
| 11... | 70 | -- | -- | -- | -- | -- | -- |
| 11... | 69 | -- | -- | -- | -- | -- | -- |
| 11... | 69 | .43 | 1.7 | 2.1 | .310 | 280 | 100 |
| SEP | | | | | | | |
| 04... | 118 | .00 | 1.2 | 1.2 | .180 | 20 | 10 |
| 04... | 103 | -- | -- | -- | -- | -- | -- |
| 04... | 40 | -- | -- | -- | -- | -- | -- |
| 04... | 28 | -- | -- | -- | -- | -- | -- |
| 04... | 27 | .00 | 1.2 | 1.2 | .210 | 20 | 40 |

### 305135095193601 LIVINGSTON RESERVOIR SITE IC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 11... | 1430 | 1.0 | 360 | 7.5 | 12.5 | 7.9 | 74 |
| 11... | 1432 | 10 | 360 | 7.5 | 12.0 | 7.5 | 69 |
| 11... | 1434 | 20 | 360 | 7.5 | 11.5 | 7.2 | 65 |
| 11... | 1436 | 30 | 360 | 7.4 | 11.5 | 7.1 | 65 |
| 11... | 1438 | 40 | 360 | 7.4 | 11.5 | 6.9 | 63 |
| 11... | 1440 | 52 | 360 | 7.4 | 11.5 | 6.7 | 61 |
| SEP | | | | | | | |
| 04... | 1912 | 1.0 | 768 | 8.0 | 30.0 | 7.4 | 96 |
| 04... | 1914 | 10 | 768 | 8.0 | 30.0 | 6.9 | 90 |
| 04... | 1916 | 20 | 768 | 7.3 | 29.5 | 1.1 | 14 |
| 04... | 1918 | 30 | 768 | 7.4 | 29.0 | .3 | 4 |
| 04... | 1920 | 40 | 768 | 7.2 | 29.0 | .1 | 1 |
| 04... | 1922 | 48 | 768 | 7.3 | 29.0 | .1 | 1 |

## LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

### 305135095235401 LIVINGSTON RESERVOIR SITE JC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH (UNITS) | TEMPERATURE, WATER (DEG C) | TRANSPARENCY (SECCHI DISK) (M) | OXYGEN, DISSOLVED (MG/L) | OXYGEN, DISSOLVED (PERCENT SATURATION) | HARDNESS (MG/L AS CACO3) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 11... | 1345 | 1.0 | 372 | 7.5 | 12.0 | .15 | 7.7 | 71 | 100 |
| 11... | 1347 | 10 | 372 | 7.5 | 11.5 | -- | 7.5 | 68 | -- |
| 11... | 1349 | 20 | 372 | 7.5 | 11.0 | -- | 7.4 | 67 | -- |
| 11... | 1351 | 30 | 372 | 7.5 | 11.0 | -- | 7.4 | 67 | -- |
| 11... | 1353 | 40 | 372 | 7.5 | 11.0 | -- | 7.4 | 67 | -- |
| 11... | 1355 | 54 | 372 | 7.4 | 11.0 | -- | 7.1 | 64 | 100 |
| SEP | | | | | | | | | |
| 04... | 1838 | 1.0 | 785 | 8.4 | 31.0 | .43 | 11.9 | 157 | 140 |
| 04... | 1840 | 10 | 785 | 8.1 | 31.0 | -- | 9.1 | 120 | -- |
| 04... | 1842 | 20 | 785 | 7.2 | 30.0 | -- | 1.3 | 17 | -- |
| 04... | 1844 | 30 | 785 | 7.2 | 29.5 | -- | .6 | 8 | -- |
| 04... | 1846 | 37 | 785 | 7.2 | 29.5 | -- | .4 | 5 | 140 |

| DATE | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 11... | 28 | 33 | 4.5 | 26 | 1.1 | 6.0 | 89 | 0 | 45 |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | 32 | 34 | 4.8 | 26 | 1.1 | 6.0 | 88 | 0 | 48 |
| SEP | | | | | | | | | |
| 04... | 6 | 46 | 6.3 | 100 | 3.7 | 11 | 140 | 12 | 110 |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | 12 | 47 | 6.2 | 96 | 3.5 | 11 | 160 | 0 | 98 |

| DATE | CHLORIDE, DISSOLVED (MG/L AS CL) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, TOTAL (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | IRON, DISSOLVED (UG/L AS FE) | MANGANESE, DISSOLVED (UG/L AS MN) |
|---|---|---|---|---|---|---|---|---|---|
| JAN | | | | | | | | | |
| 11... | 33 | 11 | 203 | .40 | 1.6 | 2.0 | .350 | 110 | 40 |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | -- | -- | -- | .09 | 1.4 | 1.5 | .300 | 150 | 30 |
| 11... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11... | 33 | 11 | 206 | .37 | 1.4 | 1.8 | .410 | 150 | 40 |
| SEP | | | | | | | | | |
| 04... | 99 | 14 | 467 | .43 | 1.6 | 2.0 | 1.800 | 90 | 20 |
| 04... | -- | -- | -- | 2.2 | 1.4 | 3.6 | 1.900 | 90 | 20 |
| 04... | -- | -- | -- | 2.7 | 1.5 | 4.2 | 1.800 | 80 | 10 |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | 97 | 14 | 448 | .89 | 1.2 | 2.1 | 1.600 | <10 | 7 |

## 303807095011101 LIVINGSTON RESERVOIR SITE AC

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | SAMPLING DEPTH (FT) | ARSENIC DISSOLVED (UG/L AS AS) | BARIUM, DISSOLVED (UG/L AS BA) | CADMIUM DISSOLVED (UG/L AS CD) | CHROMIUM, DISSOLVED (UG/L AS CR) | COPPER, DISSOLVED (UG/L AS CU) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 10... | 1120 | 1.0 | 2 | 40 | <1 | 0 | 0 |
| 10... | 1128 | 40 | -- | -- | -- | -- | -- |
| 10... | 1136 | 78 | 2 | 40 | <1 | 0 | 0 |
| SEP | | | | | | | |
| 04... | 1340 | 1.0 | 9 | 30 | <1 | 0 | 0 |
| 04... | 1346 | 30 | -- | -- | -- | -- | -- |
| 04... | 1350 | 50 | -- | -- | -- | -- | -- |
| 04... | 1356 | 74 | 11 | 100 | <1 | 0 | 0 |

| DATE | IRON, DISSOLVED (UG/L AS FE) | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY DISSOLVED (UG/L AS HG) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|
| JAN | | | | | | | |
| 10... | <10 | 0 | <1 | .1 | 0 | 0 | <3 |
| 10... | 30 | -- | 0 | -- | -- | -- | -- |
| 10... | <10 | 1 | 2 | .1 | 0 | 0 | <3 |
| SEP | | | | | | | |
| 04... | <10 | 3 | 4 | .0 | 0 | 0 | <3 |
| 04... | 20 | -- | 20 | -- | -- | -- | -- |
| 04... | 30 | -- | 270 | -- | -- | -- | -- |
| 04... | 250 | 0 | 1900 | .2 | 0 | 0 | <3 |

## LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

### 303807095011101 LIVINGSTON RESERVOIR SITE AC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE | JAN 10,80 | | SEP 4,80 | |
|---|---|---|---|---|
| TIME | 1121 | | 1341 | |
| TOTAL CELLS/ML | 200000 | | 280000 | |
| DIVERSITY: DIVISION | 1.1 | | 0.3 | |
| .CLASS | 1.1 | | 0.3 | |
| ..ORDER | 1.2 | | 1.0 | |
| ...FAMILY | 1.3 | | 1.9 | |
| ....GENUS | 2.2 | | 2.3 | |
| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
| CHLOROPHYTA (GREEN ALGAE) | | | | |
| .CHLOROPHYCEAE | | | | |
| ..CHLOROCOCCALES | | | | |
| ...COELASTRACEAE | | | | |
| ....COELASTRUM | 1800 | 1 | -- | - |
| ...MICRACTINIACEAE | | | | |
| ....GOLENKINIA | -- | - | * | 0 |
| ...OOCYSTACEAE | | | | |
| ....ANKISTRODESMUS | 3100 | 2 | * | 0 |
| ....CHLORELLA | 3100 | 2 | -- | - |
| ....CHODATELLA | * | 0 | -- | - |
| ....DICTYOSPHAERIUM | -- | - | * | 0 |
| ....KIRCHNERIELLA | 5300 | 3 | -- | - |
| ....OOCYSTIS | -- | - | * | 0 |
| ....SELENASTRUM | -- | - | * | 0 |
| ....TETRAEDRON | * | 0 | -- | - |
| ...SCENEDESMACEAE | | | | |
| ....SCENEDESMUS | 5300 | 3 | * | 0 |
| ..VOLVOCALES | | | | |
| ...CHLAMYDOMONADACEAE | | | | |
| ....CHLAMYDOMONAS | -- | - | * | 0 |
| ....CHLOROGONIUM | -- | - | * | 0 |
| ..ZYGNEMATALES | | | | |
| ...DESMIDIACEAE | | | | |
| ....EUASTRUM | * | 0 | -- | - |
| CHRYSOPHYTA | | | | |
| .BACILLARIOPHYCEAE | | | | |
| ..CENTRALES | | | | |
| ...COSCINODISCACEAE | | | | |
| ....CYCLOTELLA | 25000 | 13 | * | 0 |
| ....MELOSIRA | 1800 | 1 | * | 0 |
| ....SKELETONEMA | * | 0 | -- | - |
| ..PENNALES | | | | |
| ...NAVICULACEAE | | | | |
| ....NAVICULA | * | 0 | -- | - |
| ...NITZSCHIACEAE | | | | |
| ....NITZSCHIA | 2700 | 1 | -- | - |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | |
| .CRYPTOPHYCEAE | | | | |
| ..CRYPTOMONADALES | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | |
| ....CHROOMONAS | -- | - | * | 0 |
| ...CRYPTOMONADACEAE | | | | |
| ....CRYPTOMONAS | -- | - | 1600 | 1 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | |
| .CYANOPHYCEAE | | | | |
| ..CHROOCOCCALES | | | | |
| ...CHROOCOCCACEAE | | | | |
| ....AGMENELLUM | 100000# | 53 | 48000# | 17 |
| ....ANACYSTIS | 42000# | 21 | 15000 | 5 |
| ..HORMOGONALES | | | | |
| ...NOSTOCACEAE | | | | |
| ....ANABAENA | -- | - | * | 0 |
| ....ANABAENOPSIS | -- | - | 27000 | 9 |
| ...OSCILLATORIACEAE | | | | |
| ....LYNGBYA | -- | - | 7000 | 2 |
| ....OSCILLATORIA | -- | - | 140000# | 51 |
| ...RIVULARIACEAE | | | | |
| ....RAPHIDIOPSIS | -- | - | 32000 | 11 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | |
| .EUGLENOPHYCEAE | | | | |
| ..EUGLENALES | | | | |
| ...EUGLENACEAE | | | | |
| ....EUTREPTIA | * | 0 | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

### 305135095235401 LIVINGSTON RESERVOIR SITE JC

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| | | |
|---|---|---|
| DATE | JAN 11,80 | SEP 4,80 |
| TIME | 1346 | 1839 |
| TOTAL CELLS/ML | 1200 | 150000 |
| DIVERSITY: DIVISION | 1.7 | 0.9 |
| .CLASS | 1.7 | 0.9 |
| ..ORDER | 2.0 | 1.7 |
| ...FAMILY | 2.4 | 1.8 |
| ....GENUS | 2.9 | 2.3 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | |
| .CHLOROPHYCEAE | | | | |
| ..CHLOROCOCCALES | | | | |
| ...CHARACIACEAE | | | | |
| ....SCHROEDERIA | -- | - | * | 0 |
| ...CHLOROCOCCACEAE | | | | |
| ....CHLOROCOCCUM | 66 | 5 | -- | - |
| ...MICRACTINIACEAE | | | | |
| ....GOLENKINIA | -- | - | * | 0 |
| ...OOCYSTACEAE | | | | |
| ....ANKISTRODESMUS | 96 | 8 | * | 0 |
| ....CHLORELLA | 10 | 1 | -- | - |
| ....DICTYOSPHAERIUM | -- | - | 3400 | 2 |
| ....KIRCHNERIELLA | -- | - | * | 0 |
| ....SELENASTRUM | -- | - | * | 0 |
| ....TREUBARIA | -- | - | * | 0 |
| ...SCENEDESMACEAE | | | | |
| ....CRUCIGENIA | 20 | 2 | -- | - |
| ....SCENEDESMUS | 81 | 7 | 1400 | 1 |
| ....TETRASTRUM | 81 | 7 | -- | - |
| ..VOLVOCALES | | | | |
| ...CHLAMYDOMONADACEAE | | | | |
| ....CHLAMYDOMONAS | 66 | 5 | 5000 | 3 |
| ....CHLOROGONIUM | -- | - | 960 | 1 |
| ...PHACOTACEAE | | | | |
| ....PTEROMONAS | -- | - | * | 0 |
| CHRYSOPHYTA | | | | |
| .BACILLARIOPHYCEAE | | | | |
| ..CENTRALES | | | | |
| ...COSCINODISCACEAE | | | | |
| ....CYCLOTELLA | 66 | 5 | 3100 | 2 |
| ....MELOSIRA | -- | - | 1200 | 1 |
| ....SKELETONEMA | 220# | 18 | -- | - |
| ..PENNALES | | | | |
| ...FRAGILARIACEAE | | | | |
| ....SYNEDRA | -- | - | * | 0 |
| ...NITZSCHIACEAE | | | | |
| ....NITZSCHIA | 30 | 2 | * | 0 |
| .CHRYSOPHYCEAE | | | | |
| ..CHRYSOMONADALES | | | | |
| ...OCHROMONADACEAE | | | | |
| ....OCHROMONAS | -- | - | * | 0 |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | |
| .CRYPTOPHYCEAE | | | | |
| ..CRYPTOMONADALES | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | |
| ....CHROOMONAS | -- | - | 1400 | 1 |
| ...CRYPTOMONADACEAE | | | | |
| ....CRYPTOMONAS | -- | - | 2600 | 2 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | |
| .CYANOPHYCEAE | | | | |
| ..CHROOCOCCALES | | | | |
| ...CHROOCOCCACEAE | | | | |
| ....AGMENELLUM | -- | - | 77000# | 50 |
| ....ANACYSTIS | -- | - | 16000 | 10 |
| ..HORMOGONALES | | | | |
| ...OSCILLATORIACEAE | | | | |
| ....OSCILLATORIA | 460# | 38 | 37000# | 24 |
| EUGLENOPHYTA (EUGLENOIDS) | | | | |
| .EUGLENOPHYCEAE | | | | |
| ..EUGLENALES | | | | |
| ...EUGLENACEAE | | | | |
| ....EUTREPTIA | 30 | 2 | -- | - |
| PYRRHOPHYTA (FIRE ALGAE) | | | | |
| .DINOPHYCEAE | | | | |
| ..PERIDINIALES | | | | |
| ...GLENODINIACEAE | | | | |
| ....GLENODINIUM | -- | - | * | 0 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 08066191 LIVINGSTON RESERVOIR AT OUTFLOW WEIR NEAR GOODRICH, TX

LOCATION.--Lat 30°37'55", long 95°01'11", San Jacinto County, Hydrologic Unit 12030202, at end of conduit into stillings basin, 1,700 ft (518 m) to right of right spillway abutment, 4.8 mi (7.7 km) northwest of Goodrich, 11.7 mi (18.8 km) upstream from Long King Creek, and at mile 129.2 (207.9 km).

DRAINAGE AREA.--16,583 mi$^2$ (42,950 km$^2$).

PERIOD OF RECORD.--August 1969 to current year.

GAGE.--Water-stage recorder, concrete control, and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Trinity River Authority). Oct. 1, 1974, to Jan. 30, 1976, staff gage and control only.

REMARKS.--Records good. For details concerning outlet works, see Livingston Reservoir (station 08066190). The purpose of this station is to record selective withdrawal releases at outflow weir, crest 61.90 ft (18.867 m). These releases do not constitute the total flow from Livingston Reservoir since flow through tainter gates is not included in these totals.

AVERAGE DISCHARGE.--11 years, 230 ft$^3$/s (6.514 m$^3$/s), 166,600 acre-ft/yr (205 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 3,400 ft$^3$/s (96.3 m$^3$/s) May 2, 1974; maximum elevation, about 93.0 ft (29.35 m) June 14, 1973 (backwater from Trinity River); no flow for many days.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,320 ft$^3$/s (37.4 m$^3$/s) Apr. 21, 22; maximum elevation, 80.15 ft (25.938 m) May 19 at 1700 hours (backwater from Trinity River); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .00 | 474 | 600 | .00 | .00 | 477 | .00 | 1180 | 527 | 788 | 155 | 670 |
| 2 | .00 | 909 | 600 | .00 | .00 | 477 | .00 | 1190 | 923 | 781 | 111 | 670 |
| 3 | .00 | 916 | 600 | .00 | .00 | 477 | .00 | 1190 | 923 | 781 | 111 | 670 |
| 4 | .00 | 916 | 600 | .00 | .00 | 477 | 166 | 1180 | 923 | 788 | 111 | 676 |
| 5 | .00 | 916 | 606 | 223 | 220 | 472 | 499 | 936 | 930 | 781 | 111 | 682 |
| 6 | .00 | 916 | 606 | 467 | 450 | 472 | 499 | 1180 | 930 | 768 | 108 | 682 |
| 7 | .00 | 916 | 611 | 472 | 450 | 477 | 499 | 1180 | 923 | 768 | 108 | 688 |
| 8 | .00 | 687 | 611 | 472 | 450 | 483 | 499 | 1180 | 930 | 768 | 108 | 289 |
| 9 | .00 | 165 | 611 | 472 | 450 | 483 | 499 | 1180 | 930 | 762 | 108 | 108 |
| 10 | .00 | 566 | 611 | 472 | 450 | 483 | 472 | 1180 | 930 | 755 | 108 | 108 |
| 11 | .00 | 566 | 611 | 477 | 150 | 483 | 451 | 1190 | 930 | 749 | 108 | 108 |
| 12 | .00 | 566 | 611 | 477 | .00 | 483 | 446 | 1190 | 937 | 742 | 108 | 105 |
| 13 | .00 | 566 | 623 | 477 | .00 | 483 | 436 | 1180 | 937 | 742 | 108 | 102 |
| 14 | .00 | 572 | 634 | 477 | .00 | 483 | 446 | 983 | 937 | 742 | 108 | 102 |
| 15 | .00 | 589 | 634 | 477 | .00 | 477 | 456 | .00 | 937 | 742 | 105 | 102 |
| 16 | .00 | 589 | 634 | 472 | .00 | 477 | 456 | .00 | 937 | 742 | 102 | 102 |
| 17 | .00 | 589 | 629 | 477 | .00 | 477 | 461 | .00 | 937 | 742 | 99 | 102 |
| 18 | .00 | 589 | 623 | 488 | .00 | 483 | 472 | .00 | 937 | 749 | 99 | 102 |
| 19 | .00 | 594 | 623 | 499 | .00 | 483 | 966 | .00 | 944 | 755 | 96 | 105 |
| 20 | .00 | 594 | 623 | 499 | 320 | 483 | 1310 | .00 | 952 | 755 | 96 | 105 |
| 21 | .00 | 594 | 623 | 499 | 480 | 483 | 1320 | .00 | 952 | 749 | 96 | 105 |
| 22 | .00 | 600 | 623 | 499 | 483 | 488 | 1320 | .00 | 937 | 749 | 96 | 105 |
| 23 | .00 | 600 | 623 | 291 | 483 | 488 | 744 | .00 | 952 | 742 | 96 | 105 |
| 24 | .00 | 606 | 623 | .00 | 477 | 488 | 891 | .00 | 952 | 736 | 96 | 105 |
| 25 | .00 | 606 | 623 | .00 | 472 | 488 | 1170 | .00 | 868 | 694 | 461 | 105 |
| 26 | 103 | 606 | 623 | .00 | 467 | 488 | 1170 | .00 | 788 | 572 | 848 | 102 |
| 27 | 215 | 606 | 623 | .00 | 461 | 325 | 1180 | .00 | 781 | 572 | 841 | 102 |
| 28 | 225 | 606 | 208 | .00 | 461 | .00 | 1180 | .00 | 781 | 572 | 841 | 102 |
| 29 | 218 | 600 | .00 | .00 | 477 | .00 | 1180 | .00 | 781 | 446 | 841 | 102 |
| 30 | 211 | 600 | .00 | .00 | --- | .00 | 1180 | .00 | 781 | 190 | 350 | 102 |
| 31 | 211 | --- | .00 | .00 | --- | .00 | --- | .00 | --- | 190 | 144 | --- |
| TOTAL | 1183.00 | 19219 | 16870.00 | 8687.00 | 7201.00 | 12838.00 | 20368.00 | 16119.00 | 26827 | 21412 | 6878 | 7313 |
| MEAN | 38.2 | 641 | 544 | 280 | 248 | 414 | 679 | 520 | 894 | 691 | 222 | 244 |
| MAX | 225 | 916 | 634 | 499 | 483 | 488 | 1320 | 1190 | 952 | 788 | 848 | 688 |
| MIN | .00 | 165 | .00 | .00 | .00 | .00 | .00 | .00 | 527 | 190 | 96 | 102 |
| AC-FT | 2350 | 38120 | 33460 | 17230 | 14280 | 25460 | 40400 | 31970 | 53210 | 42470 | 13640 | 14510 |

CAL YR 1979 TOTAL 129022.00 MEAN 353 MAX 1040 MIN .00 AC-FT 255900
WTR YR 1980 TOTAL 164915.00 MEAN 451 MAX 1320 MIN .00 AC-FT 327100

## 08066200 LONG KING CREEK AT LIVINGSTON, TX

LOCATION.--Lat 30°42'58", long 94°57'31", Polk County, Hydrologic Unit 12030202, on right bank 64 ft (20 m) downstream from centerline of bridge on U.S. Highway 190, 2 mi (3 km) west of Livingston, 2 mi (3 km) upstream from Choates Creek, and 14.8 mi (23.8 km) upstream from mouth.

DRAINAGE AREA.--141 mi$^2$ (365 km$^2$).

PERIOD OF RECORD.--January 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 100.12 ft (30.517 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. No diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--17 years, 92.8 ft$^3$/s (2.628 m$^3$/s), 8.94 in/yr (227 mm/yr), 67,230 acre-ft/yr (82.9 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,500 ft$^3$/s (750 m$^3$/s) Nov. 5, 1973, gage height, 27.06 ft (8.248 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, about 41 ft (12.5 m) in May 1929.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,600 ft$^3$/s (102 m$^3$/s) Mar. 27 at 2130 hours, gage height, 13.73 ft (4.185 m), no other peak above base of 2,600 ft$^3$/s (73.6 m$^3$/s); minimum daily, 0.86 ft$^3$/s (0.024 m$^3$/s) for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 13 | 81 | 18 | 41 | 55 | 91 | 97 | 19 | 14 | 2.8 | 2.5 | 1.7 |
| 2 | 12 | 28 | 18 | 35 | 45 | 67 | 80 | 20 | 13 | 2.5 | 2.2 | 1.5 |
| 3 | 11 | 18 | 17 | 59 | 45 | 42 | 69 | 18 | 13 | 2.2 | 2.0 | 1.5 |
| 4 | 10 | 14 | 17 | 78 | 41 | 37 | 57 | 16 | 13 | 1.9 | 1.8 | 1.9 |
| 5 | 9.3 | 12 | 16 | 49 | 38 | 38 | 46 | 15 | 12 | 1.7 | 1.5 | 1.0 |
| 6 | 9.1 | 12 | 18 | 38 | 38 | 34 | 42 | 14 | 11 | 1.5 | 1.3 | 6.4 |
| 7 | 8.7 | 11 | 16 | 34 | 37 | 31 | 41 | 13 | 11 | 1.3 | 1.2 | 6.4 |
| 8 | 8.6 | 11 | 14 | 31 | 63 | 31 | 38 | 15 | 9.4 | 1.5 | 1.1 | 4.6 |
| 9 | 8.7 | 11 | 14 | 28 | 1260 | 30 | 32 | 14 | 11 | 1.5 | 1.1 | 5.0 |
| 10 | 8.4 | 11 | 14 | 28 | 719 | 28 | 27 | 13 | 13 | 1.4 | 1.0 | 4.3 |
| 11 | 7.9 | 11 | 14 | 28 | 158 | 26 | 25 | 13 | 10 | 1.3 | 1.0 | 3.4 |
| 12 | 7.6 | 9.8 | 277 | 27 | 109 | 27 | 33 | 13 | 9.4 | 1.3 | 1.0 | 2.8 |
| 13 | 7.6 | 9.3 | 779 | 24 | 82 | 25 | 280 | 13 | 9.0 | 1.3 | 1.0 | 2.4 |
| 14 | 7.7 | 8.7 | 146 | 24 | 68 | 23 | 183 | 18 | 7.6 | 1.3 | .86 | 1.9 |
| 15 | 7.8 | 8.4 | 75 | 24 | 57 | 20 | 80 | 172 | 7.2 | 1.2 | 1.3 | 1.7 |
| 16 | 7.6 | 8.4 | 52 | 24 | 75 | 25 | 49 | 899 | 6.8 | 1.2 | 3.4 | 1.9 |
| 17 | 7.6 | 8.4 | 40 | 24 | 102 | 32 | 37 | 420 | 6.8 | 1.1 | 3.1 | 1.7 |
| 18 | 7.5 | 8.5 | 32 | 26 | 68 | 30 | 32 | 139 | 6.7 | 1.5 | 1.9 | 1.5 |
| 19 | 7.1 | 9.4 | 30 | 28 | 54 | 31 | 28 | 202 | 6.3 | 1.3 | 1.5 | 6.0 |
| 20 | 6.8 | 9.0 | 29 | 30 | 50 | 86 | 24 | 128 | 5.9 | 1.1 | 1.2 | 6.0 |
| 21 | 6.6 | 680 | 29 | 65 | 45 | 130 | 23 | 60 | 5.7 | 1.0 | 1.2 | 3.4 |
| 22 | 15 | 964 | 30 | 343 | 40 | 57 | 21 | 42 | 5.3 | 1.0 | .98 | 2.1 |
| 23 | 14 | 258 | 170 | 365 | 36 | 41 | 20 | 33 | 5.3 | 1.2 | 1.0 | 1.7 |
| 24 | 13 | 106 | 537 | 111 | 35 | 58 | 20 | 27 | 5.0 | 1.0 | 1.2 | 1.3 |
| 25 | 9.7 | 56 | 141 | 74 | 30 | 55 | 49 | 24 | 4.7 | 1.0 | 1.0 | .86 |
| 26 | 8.2 | 40 | 72 | 61 | 28 | 87 | 53 | 21 | 4.3 | 1.0 | .86 | 1.8 |
| 27 | 7.6 | 31 | 49 | 52 | 25 | 1180 | 31 | 19 | 4.0 | 1.0 | .86 | 2.1 |
| 28 | 7.2 | 25 | 41 | 44 | 26 | 1930 | 22 | 18 | 3.7 | 2.5 | 3.1 | 1.9 |
| 29 | 7.2 | 21 | 65 | 40 | 27 | 520 | 19 | 17 | 3.4 | 5.0 | 2.6 | 2.4 |
| 30 | 65 | 19 | 77 | 41 | --- | 320 | 18 | 16 | 3.1 | 4.0 | 1.9 | 7.7 |
| 31 | 268 | --- | 52 | 83 | --- | 132 | --- | 15 | --- | 3.0 | 1.7 | --- |
| TOTAL | 595.5 | 2499.9 | 2899 | 1959 | 3456 | 5264 | 1576 | 2466 | 240.6 | 52.6 | 48.36 | 88.86 |
| MEAN | 19.2 | 83.3 | 93.5 | 63.2 | 119 | 170 | 52.5 | 79.5 | 8.02 | 1.70 | 1.56 | 2.96 |
| MAX | 268 | 964 | 779 | 365 | 1260 | 1930 | 280 | 899 | 14 | 5.0 | 3.4 | 7.7 |
| MIN | 6.6 | 8.4 | 14 | 24 | 25 | 20 | 18 | 13 | 3.1 | 1.0 | .86 | .86 |
| CFSM | .14 | .59 | .66 | .45 | .84 | 1.21 | .37 | .56 | .06 | .01 | .01 | .02 |
| IN. | .16 | .66 | .76 | .52 | .91 | 1.39 | .42 | .65 | .06 | .01 | .01 | .02 |
| AC-FT | 1180 | 4960 | 5750 | 3890 | 6850 | 10440 | 3130 | 4890 | 477 | 104 | 96 | 176 |

CAL YR 1979 TOTAL 66476.80 MEAN 182 MAX 8220 MIN 3.8 CFSM 1.29 IN 17.54 AC-FT 131900
WTR YR 1980 TOTAL 21145.82 MEAN 57.8 MAX 1930 MIN .86 CFSM .41 IN 5.58 AC-FT 41940

## 08066250 TRINITY RIVER NEAR GOODRICH, TX

LOCATION.--Lat 30°34'19", long 94°56'55", Polk-San Jacinto County line, Hydrologic Unit 12030202, on left bank 40 ft (12 m) downstream from downstream bridge on U.S. Highway 59, 0.2 mi (0.3 km) downstream from Long King Creek, 3.0 mi (4.8 km) southeast of Goodrich, and at mile 117.3 (188.7 km).

DRAINAGE AREA.--16,844 mi$^2$ (43,626 km$^2$).

PERIOD OF RECORD.--December 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 40.00 ft (12.192 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Regulated since Sept. 29, 1968, by Livingston Reservoir (station 08066190), capacity 2,046,000 acre-ft (2.52 km$^3$), 11.9 mi (19.1 km) upstream. No diversions between Livingston Reservoir and gaging station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--14 years (water years 1967-80), 7,068 ft$^3$/s (200.2 m$^3$/s), 5,121,000 acre-ft/yr (6.31 km$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 96,200 ft$^3$/s (2,720 m$^3$/s) June 14, 1973, gage height, 46.36 ft (14.131 m); minimum daily, 191 ft$^3$/s (5.41 m$^3$/s) Aug. 6, 1971 (regulation by Livingston Reservoir).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1929, 52.0 ft (15.85 m) in May 1942, from information by State Department of Highways and Public Transportation and by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 41,400 ft$^3$/s (1,170 m$^3$/s) May 19 at 1400 hours, gage height, 34.10 ft (10.394 m); minimum daily, 343 ft$^3$/s (9.71 m$^3$/s) Oct. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 999 | 3990 | 2080 | 9360 | 21400 | 1470 | 18600 | 6810 | 3100 | 2030 | 1010 | 1590 |
| 2 | 960 | 2760 | 2070 | 7700 | 21400 | 3090 | 14200 | 6830 | 2290 | 2030 | 875 | 1910 |
| 3 | 941 | 2170 | 1630 | 5680 | 20000 | 3220 | 10900 | 6800 | 2230 | 2030 | 857 | 1920 |
| 4 | 922 | 2120 | 885 | 5520 | 13600 | 3190 | 8800 | 6780 | 2210 | 2030 | 852 | 1920 |
| 5 | 915 | 1820 | 830 | 5080 | 9100 | 3150 | 5830 | 6130 | 2200 | 2030 | 855 | 1930 |
| 6 | 894 | 1650 | 815 | 3410 | 5760 | 3140 | 3440 | 5460 | 2180 | 2030 | 841 | 2000 |
| 7 | 710 | 1640 | 806 | 2630 | 3410 | 3130 | 2650 | 5080 | 2190 | 2030 | 836 | 1980 |
| 8 | 672 | 1610 | 795 | 2570 | 2920 | 3120 | 2580 | 5060 | 2170 | 2030 | 782 | 1590 |
| 9 | 668 | 1220 | 783 | 2550 | 6000 | 3100 | 2230 | 4940 | 2160 | 2010 | 648 | 677 |
| 10 | 662 | 1220 | 780 | 2540 | 11600 | 3100 | 1640 | 3900 | 2150 | 2000 | 635 | 599 |
| 11 | 663 | 1230 | 783 | 2510 | 12500 | 3020 | 1610 | 3250 | 2130 | 2000 | 632 | 582 |
| 12 | 658 | 1230 | 1810 | 2500 | 14200 | 2220 | 1640 | 3220 | 2110 | 1990 | 658 | 560 |
| 13 | 652 | 1220 | 9210 | 2500 | 15800 | 2080 | 2780 | 3320 | 2100 | 1980 | 659 | 548 |
| 14 | 647 | 1220 | 10100 | 2100 | 16800 | 1840 | 5470 | 6370 | 2100 | 1970 | 659 | 614 |
| 15 | 647 | 1230 | 9680 | 1360 | 17400 | 1460 | 5970 | 15200 | 2100 | 1950 | 671 | 616 |
| 16 | 644 | 1160 | 9540 | 1300 | 17400 | 1460 | 7820 | 30900 | 2100 | 1950 | 673 | 616 |
| 17 | 635 | 1010 | 9040 | 1270 | 17100 | 1450 | 9380 | 39000 | 2100 | 1950 | 658 | 616 |
| 18 | 634 | 993 | 6850 | 1270 | 13200 | 1440 | 9500 | 40000 | 2100 | 1950 | 649 | 614 |
| 19 | 628 | 988 | 4760 | 1270 | 9660 | 1440 | 10100 | 41000 | 2100 | 1950 | 647 | 676 |
| 20 | 630 | 986 | 4160 | 1600 | 8270 | 1480 | 11100 | 40400 | 2100 | 1950 | 643 | 656 |
| 21 | 630 | 2870 | 3300 | 3190 | 7330 | 1620 | 11100 | 39700 | 2100 | 1950 | 634 | 641 |
| 22 | 661 | 9250 | 2720 | 5550 | 5830 | 1510 | 11100 | 35800 | 2100 | 1970 | 635 | 633 |
| 23 | 633 | 8850 | 2830 | 11900 | 4740 | 1460 | 10100 | 31000 | 2100 | 1940 | 635 | 629 |
| 24 | 392 | 8380 | 4170 | 16200 | 3910 | 2080 | 8550 | 26900 | 2100 | 1930 | 633 | 625 |
| 25 | 350 | 7870 | 5260 | 20200 | 2900 | 2530 | 7200 | 22500 | 2060 | 1910 | 848 | 624 |
| 26 | 343 | 5670 | 7000 | 21400 | 1910 | 3070 | 6960 | 18900 | 2030 | 1780 | 1570 | 623 |
| 27 | 388 | 3880 | 9420 | 21400 | 1230 | 5820 | 6850 | 15900 | 2030 | 1760 | 1670 | 619 |
| 28 | 394 | 3580 | 11500 | 21300 | 1180 | 20400 | 6800 | 15300 | 2030 | 1770 | 1710 | 622 |
| 29 | 396 | 2580 | 12600 | 21300 | 1170 | 24300 | 6800 | 12100 | 2030 | 1710 | 1690 | 625 |
| 30 | 710 | 2110 | 12600 | 21300 | --- | 23900 | 6810 | 8560 | 2030 | 1150 | 1510 | 642 |
| 31 | 3890 | --- | 11700 | 21400 | --- | 22200 | --- | 5440 | --- | 1060 | 800 | --- |
| TOTAL | 23568 | 86507 | 160507 | 249860 | 287720 | 156490 | 218510 | 512550 | 64530 | 58820 | 27075 | 28497 |
| MEAN | 760 | 2884 | 5178 | 8060 | 9921 | 5048 | 7284 | 16530 | 2151 | 1897 | 873 | 950 |
| MAX | 3890 | 9250 | 12600 | 21400 | 21400 | 24300 | 18600 | 41000 | 3100 | 2030 | 1710 | 2000 |
| MIN | 343 | 986 | 780 | 1270 | 1170 | 1440 | 1610 | 3220 | 2030 | 1060 | 632 | 548 |
| AC-FT | 46750 | 171600 | 318400 | 495600 | 570700 | 310400 | 433400 | 1017000 | 128000 | 116700 | 53700 | 56520 |

CAL YR 1979 TOTAL 3472698 MEAN 9514 MAX 56200 MIN 343 AC-FT 6888000
WTR YR 1980 TOTAL 1874634 MEAN 5122 MAX 41000 MIN 343 AC-FT 3718000

## 08066300 MENARD CREEK NEAR RYE, TX

**LOCATION.**--Lat 30°28'52", long 94°46'46", Liberty County, Hydrologic Unit 12030202, on left bank 20 ft (6 m) downstream from bridge on State Highway 146, 2.3 mi (3.7 km) northwest of Rye, and about 6 mi (10 km) upstream from mouth.

**DRAINAGE AREA.**--152 mi$^2$ (394 km$^2$).

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--December 1965 to current year.

**GAGE.**--Water-stage recorder and crest-stage gage. Datum of gage is 62.32 ft (18.995 m) National Geodetic Vertical Datum of 1929. September 1974 to August 1976, wire-weight gage read twice daily.

**REMARKS.**--Water-discharge records good. No known diversions above station. Regulation by Bear Foot Lake on Mill Creek located 0.5 mi (0.8 km) upstream.

**AVERAGE DISCHARGE.**--14 years (water years 1967-80), 114 ft$^3$/s (3.228 m$^3$/s), 82,590 acre-ft/yr (102 hm$^3$/yr).

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 9,660 ft$^3$/s (274 m$^3$/s) May 8, 1969, gage height, 30.33 ft (9.245 m), from rating curve extended above 5,600 ft$^3$/s (159 m$^3$/s); minimum daily, 2.6 ft$^3$/s (0.074 m$^3$/s) Nov. 1, 1967.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood in May 1929 reached a stage of about 39.4 ft (12.01 m), from information by the State Department of Highways and Public Transportation. Flood in September 1961 reached a stage of about 34.0 ft (10.36 m), from information by local resident. Flood of May 1929 may have been equaled or exceeded by other floods during the period 1929-65.

**EXTREMES FOR CURRENT YEAR.**--Maximum discharge, 1,750 ft$^3$/s (49.6 m$^3$/s) Mar. 30 at 1100 hours, gage height, 19.87 ft (6.056 m); minimum daily, 12 ft$^3$/s (0.34 m$^3$/s) July 28, Aug. 28-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 61 | 333 | 94 | 167 | 129 | 98 | 1160 | 131 | 54 | 31 | 17 | 15 |
| 2 | 51 | 372 | 88 | 142 | 148 | 141 | 610 | 125 | 52 | 30 | 18 | 14 |
| 3 | 48 | 297 | 83 | 135 | 137 | 177 | 331 | 123 | 49 | 29 | 17 | 14 |
| 4 | 46 | 125 | 78 | 143 | 127 | 139 | 260 | 114 | 49 | 22 | 15 | 13 |
| 5 | 44 | 96 | 69 | 155 | 123 | 114 | 220 | 104 | 47 | 19 | 14 | 13 |
| 6 | 42 | 84 | 68 | 152 | 117 | 109 | 183 | 96 | 46 | 19 | 13 | 18 |
| 7 | 41 | 76 | 65 | 132 | 111 | 104 | 158 | 91 | 45 | 18 | 17 | 21 |
| 8 | 40 | 71 | 64 | 121 | 155 | 99 | 151 | 86 | 45 | 18 | 18 | 24 |
| 9 | 39 | 69 | 63 | 115 | 690 | 94 | 144 | 81 | 44 | 17 | 20 | 23 |
| 10 | 38 | 68 | 61 | 111 | 667 | 92 | 131 | 77 | 45 | 18 | 16 | 23 |
| 11 | 38 | 67 | 60 | 108 | 763 | 87 | 120 | 75 | 49 | 21 | 14 | 21 |
| 12 | 37 | 63 | 172 | 107 | 862 | 84 | 115 | 73 | 48 | 27 | 13 | 20 |
| 13 | 37 | 57 | 495 | 105 | 463 | 83 | 145 | 75 | 45 | 27 | 13 | 18 |
| 14 | 37 | 53 | 408 | 101 | 258 | 84 | 204 | 96 | 42 | 46 | 13 | 17 |
| 15 | 36 | 41 | 401 | 96 | 213 | 77 | 234 | 150 | 40 | 49 | 14 | 16 |
| 16 | 35 | 34 | 341 | 94 | 210 | 72 | 247 | 421 | 39 | 38 | 14 | 15 |
| 17 | 35 | 34 | 177 | 93 | 227 | 74 | 159 | 823 | 38 | 32 | 25 | 15 |
| 18 | 31 | 34 | 140 | 92 | 220 | 79 | 129 | 663 | 37 | 28 | 57 | 15 |
| 19 | 26 | 33 | 123 | 90 | 202 | 78 | 116 | 678 | 36 | 26 | 54 | 18 |
| 20 | 26 | 44 | 114 | 87 | 171 | 90 | 107 | 536 | 37 | 25 | 37 | 27 |
| 21 | 26 | 74 | 110 | 106 | 157 | 141 | 100 | 375 | 84 | 20 | 32 | 49 |
| 22 | 50 | 187 | 107 | 268 | 146 | 175 | 93 | 286 | 61 | 14 | 28 | 34 |
| 23 | 67 | 292 | 126 | 439 | 133 | 182 | 88 | 183 | 46 | 15 | 25 | 24 |
| 24 | 79 | 409 | 191 | 375 | 121 | 133 | 84 | 143 | 41 | 14 | 23 | 38 |
| 25 | 64 | 521 | 231 | 340 | 111 | 122 | 239 | 121 | 38 | 13 | 22 | 37 |
| 26 | 38 | 299 | 318 | 216 | 102 | 135 | 731 | 108 | 37 | 13 | 21 | 26 |
| 27 | 32 | 165 | 258 | 175 | 95 | 245 | 505 | 99 | 36 | 13 | 16 | 25 |
| 28 | 29 | 134 | 165 | 156 | 89 | 1060 | 400 | 92 | 34 | 12 | 12 | 24 |
| 29 | 28 | 116 | 153 | 142 | 85 | 870 | 204 | 88 | 33 | 15 | 12 | 25 |
| 30 | 71 | 103 | 164 | 133 | --- | 1610 | 152 | 74 | 32 | 15 | 12 | 51 |
| 31 | 424 | --- | 176 | 130 | --- | 1420 | --- | 58 | --- | 15 | 13 | --- |
| TOTAL | 1696 | 4351 | 5163 | 4826 | 7032 | 8068 | 7520 | 6245 | 1329 | 699 | 635 | 693 |
| MEAN | 54.7 | 145 | 167 | 156 | 242 | 260 | 251 | 201 | 44.3 | 22.5 | 20.5 | 23.1 |
| MAX | 424 | 521 | 495 | 439 | 862 | 1610 | 1160 | 823 | 84 | 49 | 57 | 51 |
| MIN | 26 | 33 | 60 | 87 | 85 | 72 | 84 | 58 | 32 | 12 | 12 | 13 |
| AC-FT | 3360 | 8630 | 10240 | 9570 | 13950 | 16000 | 14920 | 12390 | 2640 | 1390 | 1260 | 1370 |

CAL YR 1979 TOTAL 102793 MEAN 282 MAX 5500 MIN 20 AC-FT 203900
WTR YR 1980 TOTAL 48257 MEAN 132 MAX 1610 MIN 12 AC-FT 95720

## 08066300 MENARD CREEK NEAR RYE, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1965 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAMFLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (MICROMHOS) | PH FIELD (UNITS) | TEMPERATURE, WATER (DEG C) | HARDNESS (MG/L AS CACO3) | HARDNESS, NONCARBONATE (MG/L CACO3) | CALCIUM DISSOLVED (MG/L AS CA) | MAGNESIUM, DISSOLVED (MG/L AS MG) | SODIUM, DISSOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 24... | 1040 | 79 | 189 | 6.1 | 19.0 | 25 | 16 | 7.2 | 1.6 | 28 |
| DEC 04... | 1700 | 73 | 116 | -- | 9.0 | 18 | 10 | 5.1 | 1.3 | 12 |
| JAN 16... | 1425 | 93 | 121 | -- | 14.0 | 20 | 12 | 6.0 | 1.3 | 14 |
| FEB 28... | 1630 | 86 | 108 | -- | 14.5 | 19 | 7 | 5.4 | 1.3 | 13 |
| APR 09... | 1330 | 145 | 87 | -- | 19.0 | 17 | 9 | 4.8 | 1.2 | 9.2 |
| MAY 23... | 1200 | 182 | 72 | -- | 21.5 | 18 | 10 | 4.8 | 1.4 | 7.2 |
| JUL 01... | 1435 | 30 | 174 | -- | 28.5 | 26 | 14 | 7.4 | 1.8 | 22 |
| AUG 12... | 1100 | 13 | 106 | -- | 27.5 | 19 | 5 | 5.4 | 1.4 | 12 |
| SEP 25... | 1315 | 27 | 163 | -- | 26.0 | 29 | 16 | 7.2 | 2.7 | 21 |

| DATE | SODIUM ADSORPTION RATIO | POTASSIUM, DISSOLVED (MG/L AS K) | BICARBONATE (MG/L AS HCO3) | CARBONATE (MG/L AS CO3) | SULFATE DISSOLVED (MG/L AS SO4) | CHLORIDE, DISSOLVED (MG/L AS CL) | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 24... | 2.5 | 1.4 | 11 | 0 | 3.3 | 52 | .0 | 12 | 111 |
| DEC 04... | 1.2 | 1.2 | 10 | 0 | 1.7 | 25 | .1 | 13 | 64 |
| JAN 16... | 1.4 | .9 | 10 | 0 | 2.2 | 25 | .1 | 18 | 72 |
| FEB 28... | 1.3 | .8 | 14 | 0 | 2.8 | 22 | .0 | 11 | 63 |
| APR 09... | 1.0 | 1.0 | 10 | 0 | 3.2 | 17 | .1 | 12 | 53 |
| MAY 23... | .7 | 1.0 | 10 | 0 | 5.8 | 13 | .0 | 10 | 48 |
| JUL 01... | 1.9 | 1.1 | 15 | 0 | .6 | 45 | .1 | 14 | 99 |
| AUG 12... | 1.2 | .9 | 17 | 0 | .2 | 25 | .0 | 15 | 68 |
| SEP 25... | 1.7 | 1.3 | 12 | 0 | 11 | 43 | .1 | 12 | 102 |

## 08066400 BIG CREEK NEAR SHEPHERD, TX

LOCATION.--Lat 30°30'59", long 94°59'06", San Jacinto County, Hydrologic Unit 12030202, on left bank at downstream side of downstream bridge on U.S. Highway 59, 1.5 mi (2.4 km) northeast of Shepherd, and 11.6 mi (18.7 km) upstream from mouth.

DRAINAGE AREA.--38.8 mi$^2$ (100.5 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 94.90 ft (28.926 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. No known regulation above staton.

AVERAGE DISCHARGE.--14 years, 27.1 ft$^3$/s (0.767 m$^3$/s), 9.48 in/yr (241 mm/yr), 19.630 acre-ft/yr (24.2 hm$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft$^3$/s (623 m$^3$/s) June 13, 1973, gage height, 25.69 ft (7.830 m); minimum daily, 1.0 ft$^3$/s (0.028 m$^3$/s) Aug. 7, 1967.
Maximum stage since at least 1949, that of June 13, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1957 reached a stage of 20.3 ft (6.19 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 350 ft$^3$/s (9.91 m$^3$/s) and maximum (*):

| Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft$^3$/s) | Discharge (m$^3$/s) | Gage height (ft) | Gage height (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Oct. 31 | 0800 | 369 | 10.5 | 11.12 | 3.389 | Mar. 29 | 2300 | 571 | 16.2 | 12.53 | 3.819 |
| Nov. 22 | 0500 | 428 | 12.1 | 12.61 | 3.539 | May. 19 | 1500 | 562 | 15.9 | 12.48 | 3.804 |
| Feb. 9 | 0500 | *612 | 17.3 | 12.75 | 3.886 | | | | | | |

Minimum discharge, 5.4 ft$^3$/s (0.15 m$^3$/s) July 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22 | 44 | 23 | 29 | 25 | 55 | 58 | 20 | 17 | 7.1 | 7.9 | 7.6 |
| 2 | 20 | 28 | 23 | 27 | 26 | 37 | 49 | 22 | 16 | 7.0 | 7.5 | 6.9 |
| 3 | 19 | 23 | 22 | 34 | 28 | 30 | 46 | 20 | 16 | 6.9 | 7.3 | 6.8 |
| 4 | 18 | 20 | 22 | 34 | 25 | 30 | 39 | 18 | 15 | 6.8 | 7.1 | 6.6 |
| 5 | 16 | 19 | 22 | 28 | 25 | 31 | 34 | 18 | 14 | 6.7 | 7.9 | 6.7 |
| 6 | 16 | 19 | 23 | 26 | 28 | 27 | 33 | 17 | 14 | 6.6 | 9.0 | 20 |
| 7 | 16 | 18 | 21 | 26 | 25 | 27 | 35 | 17 | 13 | 6.5 | 8.9 | 19 |
| 8 | 16 | 17 | 20 | 25 | 136 | 28 | 32 | 17 | 13 | 6.4 | 8.0 | 12 |
| 9 | 15 | 19 | 19 | 24 | 439 | 26 | 27 | 17 | 14 | 6.3 | 7.8 | 13 |
| 10 | 15 | 18 | 19 | 24 | 112 | 25 | 25 | 16 | 19 | 6.2 | 9.5 | 11 |
| 11 | 14 | 17 | 20 | 25 | 69 | 24 | 25 | 16 | 13 | 6.2 | 8.8 | 9.1 |
| 12 | 14 | 16 | 65 | 23 | 56 | 26 | 26 | 15 | 12 | 6.1 | 8.0 | 8.0 |
| 13 | 14 | 15 | 97 | 21 | 48 | 23 | 81 | 17 | 11 | 6.0 | 7.4 | 7.3 |
| 14 | 14 | 15 | 44 | 22 | 44 | 21 | 52 | 37 | 10 | 5.9 | 7.0 | 7.0 |
| 15 | 13 | 15 | 34 | 22 | 43 | 21 | 33 | 55 | 10 | 5.8 | 7.8 | 6.8 |
| 16 | 13 | 15 | 31 | 22 | 60 | 25 | 28 | 151 | 9.9 | 5.8 | 15 | 6.6 |
| 17 | 14 | 14 | 27 | 22 | 54 | 27 | 25 | 162 | 9.5 | 5.7 | 9.4 | 6.4 |
| 18 | 13 | 15 | 26 | 22 | 43 | 23 | 24 | 54 | 9.3 | 5.6 | 7.9 | 6.4 |
| 19 | 13 | 15 | 26 | 21 | 41 | 22 | 23 | 354 | 9.1 | 5.7 | 7.3 | 14 |
| 20 | 13 | 15 | 26 | 27 | 39 | 34 | 22 | 103 | 10 | 7.1 | 7.0 | 12 |
| 21 | 13 | 100 | 26 | 61 | 36 | 34 | 21 | 51 | 16 | 7.8 | 6.7 | 12 |
| 22 | 32 | 253 | 27 | 147 | 33 | 24 | 20 | 42 | 12 | 15 | 6.5 | 9.7 |
| 23 | 23 | 82 | 44 | 96 | 31 | 23 | 19 | 34 | 11 | 11 | 6.3 | 7.9 |
| 24 | 15 | 47 | 82 | 48 | 30 | 25 | 19 | 29 | 11 | 8.7 | 6.1 | 7.5 |
| 25 | 14 | 36 | 40 | 40 | 27 | 22 | 55 | 27 | 10 | 7.8 | 5.9 | 8.1 |
| 26 | 13 | 32 | 32 | 36 | 26 | 26 | 53 | 25 | 9.3 | 7.5 | 6.0 | 20 |
| 27 | 13 | 28 | 29 | 31 | 25 | 107 | 27 | 23 | 8.9 | 7.4 | 6.5 | 15 |
| 28 | 13 | 26 | 27 | 29 | 26 | 207 | 23 | 21 | 8.4 | 9.4 | 6.9 | 12 |
| 29 | 13 | 24 | 48 | 29 | 26 | 287 | 21 | 21 | 8.2 | 13 | 6.9 | 14 |
| 30 | 71 | 23 | 42 | 28 | --- | 248 | 20 | 19 | 7.7 | 9.7 | 7.1 | 19 |
| 31 | 232 | --- | 32 | 27 | --- | 75 | --- | 18 | --- | 8.5 | 7.4 | --- |
| TOTAL | 760 | 1028 | 1039 | 1076 | 1626 | 1640 | 995 | 1456 | 357.3 | 232.2 | 238.8 | 318.4 |
| MEAN | 24.5 | 34.3 | 33.5 | 34.7 | 56.1 | 52.9 | 33.2 | 47.0 | 11.9 | 7.49 | 7.70 | 10.6 |
| MAX | 232 | 253 | 97 | 147 | 439 | 287 | 81 | 354 | 19 | 15 | 15 | 20 |
| MIN | 13 | 14 | 19 | 21 | 25 | 21 | 19 | 15 | 7.7 | 5.6 | 5.9 | 6.4 |
| CFSM | .63 | .88 | .86 | .89 | 1.45 | 1.36 | .86 | 1.21 | .31 | .19 | .20 | .27 |
| IN. | .73 | .99 | 1.00 | 1.03 | 1.56 | 1.57 | .95 | 1.40 | .34 | .22 | .23 | .31 |
| AC-FT | 1510 | 2040 | 2060 | 2130 | 3230 | 3250 | 1970 | 2890 | 709 | 461 | 474 | 632 |

CAL YR 1979 TOTAL 19420.5 MEAN 53.2 MAX 1020 MIN 8.0 CFSM 1.37 IN 18.62 AC-FT 38520
WTR YR 1980 TOTAL 10766.7 MEAN 29.4 MAX 439 MIN 5.6 CFSM .76 IN 10.32 AC-FT 21360

## 08066400 BIG CREEK NEAR SHEPHERD, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1963 to current year.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH (UNITS) | TEMPER-ATURE, WATER (DEG C) | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT 22... | 1100 | 41 | -- | -- | -- | -- | -- | -- | -- | -- |
| 22... | 1700 | 39 | 72 | 5.8 | 22.0 | 15 | 7 | 3.7 | 1.3 | 7.0 |
| DEC 05... | 0930 | 22 | 74 | -- | 9.5 | 14 | 5 | 3.4 | 1.3 | 6.9 |
| JAN 18... | 1555 | 21 | 76 | -- | 15.0 | 15 | 6 | 3.9 | 1.3 | 7.4 |
| FEB 21... | 1015 | 37 | 70 | -- | 15.5 | 14 | 4 | 3.5 | 1.3 | 6.6 |
| APR 08... | 1015 | 33 | 69 | -- | 18.0 | 15 | 5 | 3.5 | 1.4 | 6.7 |
| MAY 20... | 1040 | 99 | 45 | -- | 21.0 | 13 | 6 | 3.2 | 1.1 | 3.9 |
| JUL 01... | 1700 | 7.1 | 74 | -- | 28.0 | 17 | 4 | 4.1 | 1.6 | 7.5 |
| SEP 23... | 1530 | 8.0 | 67 | -- | 25.0 | 18 | 3 | 3.7 | 2.2 | 6.9 |

| DATE | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SIO2) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) |
|---|---|---|---|---|---|---|---|---|---|
| OCT 22... | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 22... | .8 | 2.1 | 9 | 0 | 6.2 | 12 | .1 | 14 | 51 |
| DEC 05... | .8 | .9 | 11 | 0 | 2.3 | 12 | .1 | 16 | 48 |
| JAN 18... | .8 | 1.1 | 11 | 0 | 7.3 | 12 | .1 | 16 | 55 |
| FEB 21... | .8 | 2.1 | 12 | 0 | 4.1 | 12 | .0 | 14 | 50 |
| APR 08... | .8 | .9 | 12 | 0 | 3.5 | 11 | .1 | 15 | 48 |
| MAY 20... | .5 | 1.2 | 8 | 0 | 4.7 | 6.4 | .0 | 9.5 | 34 |
| JUL 01... | .8 | 1.1 | 16 | 0 | 2.4 | 14 | .1 | 17 | 56 |
| SEP 23... | .7 | 1.2 | 14 | 0 | 3.9 | 15 | .1 | 16 | 55 |

## 08066500 TRINITY RIVER AT ROMAYOR, TX
(National stream-quality accounting network)

LOCATION.--Lat 30°25'30", long 94°51'02", Liberty County, Hydrologic Unit 12030202, near right bank on downstream side of pier of bridge on State Highway 105, 1.9 mi (3.1 km) south of Romayor, 1.9 mi (3.1 km) downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 3.7 mi (6.0 km) downstream from Big Creek, and at mile 94.3 (151.7 km).

DRAINAGE AREA.--17,186 mi$^2$ (44,512 km$^2$).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1924 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1392: 1932, 1935. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 35.92 ft (10.948 m) National Geodetic Vertical Datum of 1929. Prior to September 1943, nonrecording gage at datum 53.57 ft (16.328 m) higher at railroad bridge 1.9 mi (3.1 km) upstream. Sept. 15, 1975, to June 16, 1977, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records poor. Since Sept. 28, 1968, flow regulated by Livingston Reservoir (station 08066190), capacity 1,788,000 acre-ft (2.20 km$^3$), 35 mi (56 km) upstream. No large diversions between Livingston Reservoir and this station.

AVERAGE DISCHARGE.--44 years (water years 1925-68) unregulated, 7,155 ft$^3$/s (202.6 m$^3$/s), 5,184,000 acre-ft/yr (6.39 km$^3$/yr); 11 years (water years 1969-79) flow regulated by Livingston Reservoir, 7,528 ft$^3$/s (213.2 m$^3$/s), 5,454,000 acre-ft/yr (6.72 km$^3$/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 111,000 ft$^3$/s (3,140 m$^3$/s) May 9, 1942, gage height, 35.8 ft (10.91 m), from floodmarks, present site and datum; minimum, 102 ft$^3$/s (2.89 m$^3$/s) Aug. 24, 25, 1956. Maximum stage since at least 1908, that of May 9, 1942.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 61,500 ft$^3$/s (1,740 m$^3$/s) Apr. 22, gage height, 27.43 ft (8.361 m); minimum daily, 520 ft$^3$/s (14.7 m$^3$/s) Oct. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1560 | 5230 | 2110 | 9980 | 21700 | 1780 | 22900 | 7000 | 4750 | 2270 | 1200 | 1540 |
| 2 | 1540 | 4150 | 2070 | 8260 | 21600 | 2980 | 18300 | 7000 | 3370 | 2250 | 1100 | 2120 |
| 3 | 1500 | 3180 | 1970 | 5970 | 20200 | 3730 | 14400 | 6950 | 3160 | 2210 | 1040 | 2260 |
| 4 | 1480 | 2750 | 1290 | 5330 | 15400 | 3780 | 10600 | 6900 | 3070 | 2200 | 1050 | 2170 |
| 5 | 1450 | 2480 | 1120 | 5170 | 10500 | 3710 | 7270 | 6650 | 2990 | 2180 | 1060 | 2180 |
| 6 | 1450 | 2120 | 1110 | 3860 | 6710 | 3690 | 4580 | 5690 | 2920 | 2160 | 1080 | 2280 |
| 7 | 1350 | 2050 | 1090 | 2800 | 4110 | 3670 | 3180 | 5150 | 2880 | 2150 | 1080 | 2250 |
| 8 | 1220 | 2020 | 1080 | 2630 | 2980 | 3600 | 2940 | 5010 | 2840 | 2140 | 1130 | 2240 |
| 9 | 1210 | 1800 | 1080 | 2580 | 6100 | 3520 | 2770 | 4990 | 2780 | 2120 | 1010 | 1500 |
| 10 | 1190 | 1550 | 1070 | 2570 | 11900 | 3520 | 2090 | 4320 | 2750 | 2110 | 972 | 1050 |
| 11 | 1170 | 1550 | 1070 | 2570 | 13800 | 3530 | 1890 | 3370 | 2720 | 2100 | 975 | 1000 |
| 12 | 1170 | 1520 | 1320 | 2550 | 15300 | 3130 | 1850 | 3160 | 2710 | 2090 | 991 | 1010 |
| 13 | 1170 | 1490 | 7190 | 2530 | 16600 | 2550 | 2070 | 3150 | 2680 | 2080 | 985 | 1010 |
| 14 | 1140 | 1450 | 10800 | 2450 | 17400 | 2200 | 5050 | 4260 | 2660 | 2070 | 979 | 1010 |
| 15 | 1130 | 1440 | 10200 | 1770 | 18200 | 2140 | 5760 | 12000 | 2700 | 2070 | 977 | 1010 |
| 16 | 1120 | 1410 | 9900 | 1640 | 18400 | 1830 | 7610 | 27300 | 2700 | 2070 | 996 | 1010 |
| 17 | 1120 | 1280 | 9410 | 1610 | 18300 | 1740 | 9340 | 40500 | 2670 | 2050 | 979 | 1010 |
| 18 | 1120 | 1230 | 7580 | 1610 | 15500 | 1660 | 9830 | 43300 | 2660 | 2040 | 984 | 1010 |
| 19 | 1110 | 1220 | 5190 | 1610 | 11100 | 1610 | 10000 | 44200 | 2620 | 2030 | 1000 | 1010 |
| 20 | 1110 | 1220 | 4340 | 1640 | 8960 | 1680 | 11400 | 44800 | 2610 | 2030 | 995 | 1010 |
| 21 | 1100 | 1380 | 3630 | 2740 | 7770 | 1870 | 11600 | 44000 | 2630 | 2030 | 979 | 1030 |
| 22 | 1180 | 8140 | 2980 | 4250 | 6710 | 1880 | 11600 | 41100 | 2620 | 2040 | 969 | 1040 |
| 23 | 1220 | 9330 | 2910 | 10400 | 5260 | 1800 | 10900 | 36200 | 2620 | 2020 | 961 | 1050 |
| 24 | 1040 | 8990 | 3820 | 15400 | 4340 | 2010 | 9350 | 31100 | 2560 | 1990 | 950 | 1040 |
| 25 | 886 | 8590 | 4960 | 19800 | 3570 | 2500 | 8250 | 24300 | 2510 | 1990 | 952 | 1060 |
| 26 | 821 | 6920 | 6230 | 22000 | 2700 | 3140 | 8160 | 20600 | 2400 | 1900 | 1730 | 1040 |
| 27 | 816 | 4510 | 8500 | 22100 | 1940 | 4220 | 7750 | 19900 | 2340 | 1820 | 2070 | 1040 |
| 28 | 854 | 3730 | 11000 | 21800 | 1740 | 18400 | 7460 | 18100 | 2310 | 1830 | 2130 | 1030 |
| 29 | 859 | 3050 | 12400 | 21700 | 1700 | 26000 | 7190 | 14400 | 2300 | 1830 | 2110 | 1050 |
| 30 | 975 | 2280 | 12700 | 21700 | --- | 27800 | 7030 | 10700 | 2290 | 1500 | 2050 | 1100 |
| 31 | 3910 | --- | 12300 | 21700 | --- | 26200 | --- | 7240 | --- | 1240 | 1500 | --- |
| TOTAL | 38971 | 98060 | 162400 | 252720 | 310490 | 171870 | 243120 | 553340 | 82820 | 62610 | 36984 | 40160 |
| MEAN | 1257 | 3269 | 5239 | 8152 | 10710 | 5544 | 8104 | 17850 | 2761 | 2020 | 1193 | 1339 |
| MAX | 3910 | 9330 | 12700 | 22100 | 21700 | 27800 | 22900 | 44800 | 4750 | 2270 | 2130 | 2280 |
| MIN | 816 | 1220 | 1070 | 1610 | 1700 | 1610 | 1850 | 3150 | 2290 | 1240 | 950 | 1000 |
| AC-FT | 77300 | 194500 | 322100 | 501300 | 615900 | 340900 | 482200 | 1098000 | 164300 | 124200 | 73360 | 79660 |

CAL YR 1979 TOTAL 3866121 MEAN 10590 MAX 60500 MIN 816 AC-FT 7668000
WTR YR 1980 TOTAL 2053545 MEAN 5611 MAX 44800 MIN 816 AC-FT 4073000

## 08066500 TRINITY RIVER AT ROMAYOR, TX--Continued

### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1945 to November 1949, February 1950 to September 1951, April 1953 to current year. Chemical, biochemical, and pesticide analyses: February 1968 to current year. Sediment records: October 1974 to September 1975.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1945 to November 1949, February 1950 to current year.
WATER TEMPERATURES: February 1950 to September 1951, October 1953 to current year.
SUSPENDED SEDIMENT DISCHARGE: April 1968 to September 1971.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (1945-50, 1953-80): Maximum daily, 3,800 micromhos Oct. 30, 1956; minimum daily, 103 micromhos Nov. 9, 1946.
WATER TEMPERATURES (1953-58, 1961-74, 1976-80): Maximum daily, 37.0°C July 18, 27, 1953; minimum daily, 3.0°C Jan. 18, 1956, Jan. 15, 16, 1968, Jan. 2, 3, 1979.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 357 micromhos Sept. 12; minimum daily, 188 micromhos Nov. 22.
WATER TEMPERATURES: Minimum daily, 29.0°C on several days during July; minimum daily, 7.0°C Feb. 17, 18.

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | STREAM-FLOW, INSTAN-TANEOUS (CFS) | SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) | PH FIELD (UNITS) | TEMPER-ATURE, WATER (DEG C) | COLOR (PLAT-INUM COBALT UNITS) | TUR-BID-ITY (NTU) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) | OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) | COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 16... | 0900 | 1120 | 340 | 7.9 | 23.0 | 10 | 5.5 | 12.2 | 140 | 2.8 | K2 | K1 |
| NOV 26... | 1300 | 6820 | 260 | 6.5 | 15.0 | 30 | 10 | 10.1 | 99 | 1.9 | 120 | 110 |
| DEC 11... | 1030 | 1070 | 310 | 8.0 | 15.0 | 10 | 8.7 | 10.3 | 101 | 2.5 | 24 | K12 |
| JAN 22... | 1445 | 4250 | 290 | 7.8 | 13.0 | 40 | 29 | 11.0 | 104 | 2.1 | 1300 | 1200 |
| FEB 06... | 1620 | 6300 | 316 | 8.2 | 11.0 | 10 | 11 | 11.4 | 102 | .5 | K6 | K2 |
| MAR 05... | 1200 | 3700 | 255 | 8.2 | 11.0 | 25 | 12 | 11.4 | 103 | 2.7 | 80 | K14 |
| APR 09... | 0900 | 2830 | 310 | 8.0 | 16.5 | 10 | 7.1 | 9.9 | 99 | 1.4 | 32 | 92 |
| MAY 20... | 1735 | 44900 | 365 | 8.5 | 24.0 | 30 | 20 | 6.9 | 81 | 5.0 | 4800 | 150 |
| JUN 17... | 1520 | 2670 | 325 | 7.5 | 28.0 | 30 | 13 | 8.5 | 106 | 2.7 | 40 | K6 |
| JUL 09... | 1045 | 2130 | 320 | 8.2 | 29.5 | 30 | 5.4 | 8.5 | 110 | 3.2 | 64 | 1500 |
| AUG 20... | 1035 | 993 | 345 | 8.5 | 28.0 | 0 | 8.0 | 7.8 | 99 | 4.5 | 40 | 32 |
| SEP 23... | 1030 | 1040 | 340 | 8.5 | 30.0 | 20 | 8.9 | 8.0 | 105 | 3.0 | 32 | 20 |

| DATE | HARD-NESS (MG/L AS CACO3) | HARD-NESS, NONCAR-BONATE (MG/L CACO3) | CALCIUM DIS-SOLVED (MG/L AS CA) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) | SODIUM, DIS-SOLVED (MG/L AS NA) | SODIUM AD-SORP-TION RATIO | POTAS-SIUM, DIS-SOLVED (MG/L AS K) | BICAR-BONATE (MG/L AS HCO3) | CAR-BONATE (MG/L AS CO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT 16... | 110 | 27 | 38 | 3.4 | 20 | .8 | 3.8 | 100 | 0 | 24 | 27 |
| NOV 26... | 90 | 8 | 31 | 3.1 | 20 | .9 | 4.5 | 100 | 0 | 28 | 22 |
| DEC 11... | 100 | 2 | 35 | 3.2 | 22 | 1.0 | 3.8 | 120 | 0 | 24 | 24 |
| JAN 22... | 84 | 13 | 29 | 2.9 | 20 | .9 | 4.0 | 87 | 0 | 28 | 21 |
| FEB 06... | 92 | 13 | 31 | 3.6 | 25 | 1.1 | 4.8 | 96 | 0 | 35 | 24 |
| MAR 05... | 92 | 27 | 31 | 3.5 | 24 | 1.1 | 4.3 | 79 | 0 | 36 | 28 |
| APR 09... | 97 | 24 | 33 | 3.6 | 24 | 1.1 | 4.4 | 89 | 0 | 36 | 25 |
| MAY 20... | 94 | 12 | 31 | 4.0 | 26 | 1.2 | 4.6 | 96 | 2 | 40 | 38 |
| JUN 17... | 98 | 18 | 33 | 3.7 | 23 | 1.0 | 4.6 | 130 | 0 | 35 | 27 |
| JUL 09... | 100 | 23 | 34 | 3.8 | 24 | 1.0 | 4.8 | 94 | 0 | 33 | 30 |
| AUG 20... | 100 | 16 | 34 | 3.7 | 25 | 1.1 | 4.9 | 100 | 3 | 31 | 34 |
| SEP 23... | 110 | 15 | 36 | 3.7 | 25 | 1.1 | 5.1 | 110 | 2 | 28 | 34 |

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | FLUORIDE, DISSOLVED (MG/L AS F) | SILICA, DISSOLVED (MG/L AS SIO2) | SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) | SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) | SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) | SOLIDS, VOLATILE, SUSPENDED (MG/L) | NITROGEN, NO2+NO3 TOTAL (MG/L AS N) | NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) | NITROGEN, AMMONIA TOTAL (MG/L AS N) | NITROGEN, AMMONIA DISSOLVED (MG/L AS N) | NITROGEN, ORGANIC TOTAL (MG/L AS N) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | | |
| 16... | .2 | 8.6 | 197 | 174 | 14 | 13 | .02 | .03 | .220 | .010 | .47 |
| NOV | | | | | | | | | | | |
| 26... | .2 | 6.8 | 167 | 165 | 46 | 24 | .06 | .08 | .020 | .050 | .98 |
| DEC | | | | | | | | | | | |
| 11... | .2 | 9.4 | 191 | 181 | 36 | 4 | .02 | .01 | .000 | .000 | .68 |
| JAN | | | | | | | | | | | |
| 22... | .2 | 8.0 | 174 | 156 | 30 | 14 | .08 | .09 | .060 | .000 | .88 |
| FEB | | | | | | | | | | | |
| 06... | .3 | 6.8 | 184 | 179 | 23 | 8 | .15 | .24 | .040 | .040 | .51 |
| MAR | | | | | | | | | | | |
| 05... | .2 | 7.5 | 191 | 175 | 19 | 9 | .42 | .41 | .040 | .030 | 1.3 |
| APR | | | | | | | | | | | |
| 09... | .3 | .2 | 188 | 172 | 21 | 2 | .26 | .26 | .060 | .060 | 1.9 |
| MAY | | | | | | | | | | | |
| 20... | .2 | 4.4 | 198 | 198 | 14 | 10 | .16 | .15 | .070 | .030 | .73 |
| JUN | | | | | | | | | | | |
| 17... | .3 | 6.9 | 202 | 183 | 19 | 6 | .32 | .18 | .030 | .040 | .97 |
| JUL | | | | | | | | | | | |
| 09... | .4 | 6.9 | 194 | 183 | 15 | 2 | .01 | .00 | .010 | .000 | .99 |
| AUG | | | | | | | | | | | |
| 20... | .3 | 9.0 | 202 | 194 | 42 | 12 | .00 | .00 | .000 | .000 | 1.3 |
| SEP | | | | | | | | | | | |
| 23... | .3 | 9.2 | 204 | 196 | 16 | 14 | .00 | .00 | .000 | .000 | 1.0 |

| DATE | NITROGEN, ORGANIC DISSOLVED (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) | PHOSPHORUS, DISSOLVED (MG/L AS P) | CARBON, ORGANIC TOTAL (MG/L AS C) | CARBON, ORGANIC DISSOLVED (MG/L AS C) | CARBON, ORGANIC SUSPENDED (MG/L AS C) | SEDIMENT, SUSPENDED (MG/L) | SEDIMENT DISCHARGE, SUSPENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OCT | | | | | | | | | | | |
| 16... | .79 | .69 | .80 | .090 | .060 | 8.7 | -- | -- | 7 | 21 | 97 |
| NOV | | | | | | | | | | | |
| 26... | .38 | 1.0 | .43 | .120 | .070 | 10 | -- | -- | 40 | 737 | 88 |
| DEC | | | | | | | | | | | |
| 11... | .61 | .68 | .61 | .150 | .050 | -- | 5.0 | .8 | 47 | 136 | 54 |
| JAN | | | | | | | | | | | |
| 22... | .53 | .94 | .53 | .100 | .100 | 8.0 | -- | -- | 86 | 987 | 96 |
| FEB | | | | | | | | | | | |
| 06... | .46 | .55 | .50 | .140 | .070 | 7.2 | -- | -- | 23 | 391 | 92 |
| MAR | | | | | | | | | | | |
| 05... | .74 | 1.3 | .77 | .090 | .090 | -- | 9.7 | .8 | 19 | 190 | 94 |
| APR | | | | | | | | | | | |
| 09... | .58 | 2.0 | .64 | .200 | .190 | 7.0 | -- | -- | 18 | 138 | 94 |
| MAY | | | | | | | | | | | |
| 20... | .97 | .80 | 1.0 | .210 | .140 | 13 | -- | -- | 225 | 27300 | 36 |
| JUN | | | | | | | | | | | |
| 17... | .83 | 1.0 | .87 | .210 | .150 | -- | 7.1 | .5 | 33 | 238 | 88 |
| JUL | | | | | | | | | | | |
| 09... | 1.0 | 1.0 | 1.0 | .240 | .180 | 8.9 | -- | -- | 21 | 121 | 88 |
| AUG | | | | | | | | | | | |
| 20... | 1.1 | 1.3 | 1.1 | .240 | .160 | 11 | -- | -- | 21 | 56 | 99 |
| SEP | | | | | | | | | | | |
| 23... | .76 | 1.0 | .76 | .210 | .170 | -- | 7.1 | 1.9 | 16 | 45 | 97 |

| DATE | TIME | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUSPENDED TOTAL (UG/L AS AS) | ARSENIC DISSOLVED (UG/L AS AS) | BARIUM, TOTAL RECOVERABLE (UG/L AS BA) | BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) | BARIUM, DISSOLVED (UG/L AS BA) | CADMIUM TOTAL RECOVERABLE (UG/L AS CD) | CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) | CADMIUM DISSOLVED (UG/L AS CD) | CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV | | | | | | | | | | | |
| 26... | 1300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DEC | | | | | | | | | | | |
| 11... | 1030 | 3 | 1 | 2 | 300 | 200 | 70 | 8 | 7 | <1 | 8 |
| FEB | | | | | | | | | | | |
| 06... | 1620 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR | | | | | | | | | | | |
| 05... | 1200 | 2 | 1 | 1 | 100 | 50 | 50 | 4 | 3 | <1 | 0 |
| MAY | | | | | | | | | | | |
| 20... | 1735 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN | | | | | | | | | | | |
| 17... | 1520 | 6 | 0 | 6 | 100 | 40 | 60 | 2 | 1 | 1 | 0 |
| AUG | | | | | | | | | | | |
| 20... | 1035 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP | | | | | | | | | | | |
| 23... | 1030 | 8 | 1 | 7 | 100 | 40 | 60 | 0 | -- | <1 | 10 |

## 08066500 TRINITY RIVER AT ROMAYOR, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) | CHROMIUM, DISSOLVED (UG/L AS CR) | COBALT, TOTAL RECOVERABLE (UG/L AS CO) | COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) | COBALT, DISSOLVED (UG/L AS CO) | COPPER, TOTAL RECOVERABLE (UG/L AS CU) | COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) | COPPER, DISSOLVED (UG/L AS CU) | IRON, TOTAL RECOVERABLE (UG/L AS FE) | IRON, SUSPENDED RECOVERABLE (UG/L AS FE) | IRON, DISSOLVED (UG/L AS FE) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 26... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DEC 11... | 8 | 0 | 0 | 0 | <3 | 2 | 2 | 0 | 720 | 690 | 30 |
| FEB 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 05... | 0 | 0 | 0 | 0 | <3 | 6 | 5 | 1 | 540 | 480 | 60 |
| MAY 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 17... | 0 | 0 | 0 | -- | <3 | 5 | 2 | 3 | 640 | 600 | 40 |
| AUG 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 23... | 10 | 0 | 1 | -- | <3 | 80 | 80 | 0 | 410 | -- | <10 |

| DATE | LEAD, TOTAL RECOVERABLE (UG/L AS PB) | LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) | LEAD, DISSOLVED (UG/L AS PB) | MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) | MANGANESE, SUSPENDED RECOV. (UG/L AS MN) | MANGANESE, DISSOLVED (UG/L AS MN) | MERCURY TOTAL RECOVERABLE (UG/L AS HG) | MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) | MERCURY DISSOLVED (UG/L AS HG) | NICKEL, TOTAL RECOVERABLE (UG/L AS NI) | NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 26... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DEC 11... | 34 | 0 | 38 | 110 | 90 | 20 | .1 | .1 | .0 | 2 | 0 |
| FEB 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 05... | 55 | 33 | 22 | 50 | 50 | <1 | .1 | .0 | .1 | 2 | 0 |
| MAY 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 17... | 19 | 19 | 0 | 100 | 90 | 10 | -- | -- | .0 | 0 | 0 |
| AUG 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 23... | 13 | 13 | 0 | 130 | 130 | 2 | .2 | .2 | .0 | 10 | 8 |

| DATE | NICKEL, DISSOLVED (UG/L AS NI) | SELENIUM, TOTAL (UG/L AS SE) | SELENIUM, SUSPENDED TOTAL (UG/L AS SE) | SELENIUM, DISSOLVED (UG/L AS SE) | SILVER, TOTAL RECOVERABLE (UG/L AS AG) | SILVER, SUSPENDED RECOVERABLE (UG/L AS AG) | SILVER, DISSOLVED (UG/L AS AG) | ZINC, TOTAL RECOVERABLE (UG/L AS ZN) | ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) | ZINC, DISSOLVED (UG/L AS ZN) |
|---|---|---|---|---|---|---|---|---|---|---|
| NOV 26... | -- | -- | -- | -- | 1 | -- | -- | -- | -- | -- |
| DEC 11... | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 40 | 5 |
| FEB 06... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| MAR 05... | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 30 | <3 |
| MAY 20... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| JUN 17... | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | -- | <3 |
| AUG 20... | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- |
| SEP 23... | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 70 | -- | <3 |

## 08066500 TRINITY RIVER AT ROMAYOR, TX--Continued

### WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | TIME | PCB, TOTAL (UG/L) | PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) | NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | CHLORDANE, TOTAL (UG/L) | CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN 22... | 1445 | .0 | 0 | .00 | .00 | .0 | .0 | 0 | .00 | .0 |
| JUL 09... | 1045 | .0 | 0 | .00 | .00 | .0 | .0 | 0 | .00 | .1 |

| DATE | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) | DIAZINON, TOTAL (UG/L) | DIELDRIN TOTAL (UG/L) | DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) | ENDOSULFAN, TOTAL (UG/L) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN 22... | .00 | .1 | .00 | .0 | .01 | .00 | .0 | .00 | .00 | .0 |
| JUL 09... | .00 | .2 | .00 | .0 | .01 | .00 | .0 | .00 | .00 | .0 |

| DATE | ETHION, TOTAL (UG/L) | HEPTACHLOR, TOTAL (UG/L) | HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) | HEPTACHLOR EPOXIDE TOTAL (UG/L) | HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) | MALATHION, TOTAL (UG/L) | METHOXYCHLOR, TOTAL (UG/L) | METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN 22... | .00 | .00 | .0 | .00 | .0 | .00 | .0 | .00 | .00 | .0 |
| JUL 09... | .00 | .00 | .0 | .00 | .0 | .00 | .0 | .00 | .00 | .0 |

| DATE | METHYL PARATHION, TOTAL (UG/L) | METHYL TRITHION, TOTAL (UG/L) | MIREX, TOTAL (UG/L) | PARATHION, TOTAL (UG/L) | TOXAPHENE, TOTAL (UG/L) | TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) | TOTAL TRITHION (UG/L) | 2,4-D, TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) | SILVEX, TOTAL (UG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| JAN 22... | .00 | .00 | .00 | .00 | 0 | 0 | .00 | .03 | .00 | .00 |
| JUL 09... | .00 | .00 | .00 | .00 | 0 | 0 | .00 | .04 | .00 | .00 |

## 08066500 TRINITY RIVER AT ROMAYOR, TX--Continued

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE | NOV 26,79 | MAR 5,80 | MAY 20,80 | JUN 17,80 |
|---|---|---|---|---|
| TIME | 1300 | 1200 | 1735 | 1520 |
| TOTAL CELLS/ML | 110000 | 37000 | 36000 | 31000 |
| DIVERSITY: DIVISION | 1.1 | 1.5 | 1.1 | 1.2 |
| .CLASS | 1.1 | 1.5 | 1.1 | 1.2 |
| ..ORDER | 1.7 | 1.6 | 1.2 | 1.5 |
| ...FAMILY | 1.9 | 1.8 | 1.4 | 1.7 |
| ....GENUS | 2.7 | 2.5 | 1.6 | 2.6 |

| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
|---|---|---|---|---|---|---|---|---|
| CHLOROPHYTA (GREEN ALGAE) | | | | | | | | |
| .CHLOROPHYCEAE | | | | | | | | |
| ..CHLOROCOCCALES | | | | | | | | |
| ...CHARACIACEAE | | | | | | | | |
| ....SCHROEDERIA | -- | - | -- | - | -- | - | -- | - |
| ...CHLOROCOCCACEAE | | | | | | | | |
| ....CHLOROCOCCUM | * | 0 | -- | - | -- | - | -- | - |
| ...COELASTRACEAE | | | | | | | | |
| ....COELASTRUM | 1900 | 2 | -- | - | 670 | 2 | -- | - |
| ...OOCYSTACEAE | | | | | | | | |
| ....ANKISTRODESMUS | 3400 | 3 | 430 | 1 | 670 | 2 | * | 0 |
| ....CHLORELLA | 2900 | 3 | -- | - | -- | - | * | 0 |
| ....CHODATELLA | -- | - | 430 | 1 | -- | - | * | 0 |
| ....DICTYOSPHAERIUM | -- | - | 860 | 2 | -- | - | 2600 | 8 |
| ....KIRCHNERIELLA | 7800 | 7 | -- | - | -- | - | 280 | 1 |
| ....OOCYSTIS | -- | - | 860 | 2 | -- | - | * | 0 |
| ....POLYEDRIOPSIS | -- | - | -- | - | -- | - | -- | - |
| ....SELENASTRUM | -- | - | -- | - | 340 | 1 | 210 | 1 |
| ....TETRAEDRON | -- | - | -- | - | * | 0 | -- | - |
| ....TREUBARIA | -- | - | -- | - | -- | - | -- | - |
| ....WESTELLA | -- | - | -- | - | -- | - | -- | - |
| ...SCENEDESMACEAE | | | | | | | | |
| ....ACTINASTRUM | -- | - | -- | - | -- | - | -- | - |
| ....CRUCIGENIA | -- | - | -- | - | -- | - | -- | - |
| ....SCENEDESMUS | 3900 | 3 | 5200 | 14 | 2500 | 7 | 1300 | 4 |
| ....TETRASTRUM | 1500 | 1 | 2600 | 7 | 540 | 1 | 570 | 2 |
| ..VOLVOCALES | | | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | | | |
| ....CHLAMYDOMONAS | -- | - | -- | - | 870 | 2 | * | 0 |
| ....PLATYMONAS | * | 0 | -- | - | -- | - | -- | - |
| CHRYSOPHYTA | | | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | | | |
| ..CENTRALES | | | | | | | | |
| ...COSCINODISCACEAE | | | | | | | | |
| ....CYCLOTELLA | 6600 | 6 | 16000# | 45 | 2700 | 7 | 4000 | 13 |
| ....MELOSIRA | -- | - | 1300 | 4 | -- | - | -- | - |
| ....SKELETONEMA | 2900 | 3 | -- | - | -- | - | -- | - |
| ..PENNALES | | | | | | | | |
| ...ACHNANTHACEAE | | | | | | | | |
| ....COCCONEIS | -- | - | -- | - | -- | - | -- | - |
| ...FRAGILARIACEAE | | | | | | | | |
| ....FRAGILARIA | -- | - | -- | - | -- | - | -- | - |
| ....SYNEDRA | -- | - | -- | - | -- | - | -- | - |
| ...NITZSCHIACEAE | | | | | | | | |
| ....NITZSCHIA | -- | - | -- | - | 540 | 1 | 280 | 1 |
| ...SURIRELLACEAE | | | | | | | | |
| ....SURIRELLA | -- | - | 210 | 1 | -- | - | -- | - |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | | | |
| .CRYPTOPHYCEAE | | | | | | | | |
| ..CRYPTOMONADALES | | | | | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | | | | | |
| ....CHROOMONAS | -- | - | -- | - | * | 0 | -- | - |
| ...CRYPTOMONADACEAE | | | | | | | | |
| ....CRYPTOMONAS | -- | - | -- | - | -- | - | * | 0 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | | | |
| .CYANOPHYCEAE | | | | | | | | |
| ..CHROOCOCCALES | | | | | | | | |
| ...CHROOCOCCACEAE | | | | | | | | |
| ....AGMENELLUM | 48000# | 42 | 1700 | 5 | 27000# | 74 | 12000# | 38 |
| ....ANACYSTIS | 15000 | 13 | 6700# | 18 | 200 | 1 | 7200# | 23 |
| ....COCCOCHLORIS | -- | - | -- | - | -- | - | -- | - |
| ....GOMPHOSPHAERIA | -- | - | -- | - | -- | - | 1100 | 4 |
| ..HORMOGONALES | | | | | | | | |
| ...NOSTOCACEAE | | | | | | | | |
| ....ANABAENA | -- | - | -- | - | -- | - | -- | - |
| ....ANABAENOPSIS | -- | - | -- | - | -- | - | -- | - |
| ...OSCILLATORIACEAE | | | | | | | | |
| ....LYNGBYA | -- | - | -- | - | -- | - | -- | - |
| ....OSCILLATORIA | -- | - | -- | - | -- | - | 1300 | 4 |
| ....SCHIZOTHRIX | 19000# | 17 | -- | - | -- | - | -- | - |
| ...RIVULARIACEAE | | | | | | | | |
| ....RAPHIDIOPSIS | -- | - | -- | - | -- | - | -- | - |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | | | |
| .EUGLENOPHYCEAE | | | | | | | | |
| ..EUGLENALES | | | | | | | | |
| ...EUGLENACEAE | | | | | | | | |
| ....EUGLENA | -- | - | -- | - | * | 0 | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

### PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

| DATE | JUL 9,80 | | AUG 20,80 | | SEP 23,80 | |
|---|---|---|---|---|---|---|
| TIME | 1045 | | 1035 | | 1030 | |
| TOTAL CELLS/ML | 77000 | | 660000 | | 280000 | |
| DIVERSITY: DIVISION | 1.0 | | 0.2 | | 0.8 | |
| .CLASS | 1.0 | | 0.2 | | 0.8 | |
| ..ORDER | 1.9 | | 1.1 | | 1.3 | |
| ...FAMILY | 2.4 | | 1.7 | | 2.2 | |
| ....GENUS | 3.0 | | 2.1 | | 2.6 | |
| ORGANISM | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT | CELLS /ML | PER- CENT |
| CHLOROPHYTA (GREEN ALGAE) | | | | | | |
| .CHLOROPHYCEAE | | | | | | |
| ..CHLOROCOCCALES | | | | | | |
| ...CHARACIACEAE | | | | | | |
| ....SCHROEDERIA | -- | - | -- | - | * | 0 |
| ...CHLOROCOCCACEAE | | | | | | |
| ....CHLOROCOCCUM | -- | - | -- | - | -- | - |
| ...COELASTRACEAE | | | | | | |
| ....COELASTRUM | -- | - | -- | - | 6400 | 2 |
| ...OOCYSTACEAE | | | | | | |
| ....ANKISTRODESMUS | 520 | 1 | 7100 | 1 | 4800 | 2 |
| ....CHLORELLA | -- | - | -- | - | -- | - |
| ....CHODATELLA | -- | - | -- | - | -- | - |
| ....DICTYOSPHAERIUM | 690 | 1 | -- | - | 5200 | 2 |
| ....KIRCHNERIELLA | 690 | 1 | * | 0 | -- | - |
| ....OOCYSTIS | 1000 | 1 | * | 0 | * | 0 |
| ....POLYEDRIOPSIS | * | 0 | -- | - | -- | - |
| ....SELENASTRUM | * | 0 | * | 0 | * | 0 |
| ....TETRAEDRON | -- | - | * | 0 | * | 0 |
| ....TREUBARIA | * | 0 | * | 0 | -- | - |
| ....WESTELLA | -- | - | -- | - | 1600 | 1 |
| ...SCENEDESMACEAE | | | | | | |
| ....ACTINASTRUM | -- | - | * | 0 | -- | - |
| ....CRUCIGENIA | -- | - | -- | - | 1600 | 1 |
| ....SCENEDESMUS | 11000 | 14 | * | 0 | 13000 | 5 |
| ....TETRASTRUM | -- | - | -- | - | -- | - |
| ..VOLVOCALES | | | | | | |
| ...CHLAMYDOMONADACEAE | | | | | | |
| ....CHLAMYDOMONAS | 1400 | 2 | -- | - | * | 0 |
| ....PLATYMONAS | -- | - | -- | - | -- | - |
| CHRYSOPHYTA | | | | | | |
| .BACILLARIOPHYCEAE | | | | | | |
| ..CENTRALES | | | | | | |
| ...COSCINODISCACEAE | | | | | | |
| ....CYCLOTELLA | 1500 | 2 | * | 0 | 5600 | 2 |
| ....MELOSIRA | * | 0 | * | 0 | 2400 | 1 |
| ....SKELETONEMA | -- | - | -- | - | -- | - |
| ..PENNALES | | | | | | |
| ...ACHNANTHACEAE | | | | | | |
| ....COCCONEIS | -- | - | -- | - | * | 0 |
| ...FRAGILARIACEAE | | | | | | |
| ....FRAGILARIA | -- | - | * | 0 | -- | - |
| ....SYNEDRA | -- | - | * | 0 | -- | - |
| ...NITZSCHIACEAE | | | | | | |
| ....NITZSCHIA | 2100 | 3 | * | 0 | 2000 | 1 |
| ...SURIRELLACEAE | | | | | | |
| ....SURIRELLA | -- | - | -- | - | -- | - |
| CRYPTOPHYTA (CRYPTOMONADS) | | | | | | |
| .CRYPTOPHYCEAE | | | | | | |
| ..CRYPTOMONADALES | | | | | | |
| ...CRYPTOCHRYSIDACEAE | | | | | | |
| ....CHROOMONAS | -- | - | -- | - | -- | - |
| ...CRYPTOMONADACEAE | | | | | | |
| ....CRYPTOMONAS | -- | - | * | 0 | * | 0 |
| CYANOPHYTA (BLUE-GREEN ALGAE) | | | | | | |
| .CYANOPHYCEAE | | | | | | |
| ..CHROOCOCCALES | | | | | | |
| ...CHROOCOCCACEAE | | | | | | |
| ....AGMENELLUM | 6200 | 8 | 160000# | 24 | -- | - |
| ....ANACYSTIS | 16000# | 21 | 36000 | 5 | 32000 | 11 |
| ....COCCOCHLORIS | -- | - | * | 0 | -- | - |
| ....GOMPHOSPHAERIA | 2100 | 3 | -- | - | -- | - |
| ..HORMOGONALES | | | | | | |
| ...NOSTOCACEAE | | | | | | |
| ....ANABAENA | 8400 | 11 | 5500 | 1 | -- | - |
| ....ANABAENOPSIS | 2100 | 3 | 64000 | 10 | 85000# | 30 |
| ...OSCILLATORIACEAE | | | | | | |
| ....LYNGBYA | -- | - | 12000 | 2 | 19000 | 7 |
| ....OSCILLATORIA | 22000# | 29 | 340000# | 51 | 100000# | 36 |
| ....SCHIZOTHRIX | -- | - | -- | - | -- | - |
| ...RIVULARIACEAE | | | | | | |
| ....RAPHIDIOPSIS | -- | - | 19000 | 3 | -- | - |
| EUGLENOPHYTA (EUGLENOIDS) | | | | | | |
| .EUGLENOPHYCEAE | | | | | | |
| ..EUGLENALES | | | | | | |
| ...EUGLENACEAE | | | | | | |
| ....EUGLENA | -- | - | -- | - | -- | - |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 08066500 TRINITY RIVER AT ROMAYOR, TX--Continued

### MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | YEAR | DISCHARGE (CFS-DAYS) | SPECIFIC CONDUCT-ANCE (MICRO-MHOS) | DIS-SOLVED SOLIDS (MG/L) | DIS-SOLVED SOLIDS (TONS) | DIS-SOLVED CHLORIDE (MG/L) | DIS-SOLVED CHLORIDE (TONS) | DIS-SOLVED SULFATE (MG/L) | DIS-SOLVED SULFATE (TONS) | HARDNESS (CA,MG) (MG/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| OCT. | 1979 | 38971 | 302 | 166 | 17500 | 22 | 2340 | 28 | 2940 | 99 |
| NOV. | 1979 | 98060 | 271 | 149 | 39500 | 19 | 5080 | 25 | 6640 | 91 |
| DEC. | 1979 | 162400 | 286 | 157 | 69000 | 21 | 9010 | 26 | 11600 | 95 |
| JAN. | 1980 | 252720 | 307 | 168 | 115000 | 23 | 15500 | 28 | 19300 | 100 |
| FEB. | 1980 | 310490 | 316 | 173 | 145000 | 24 | 19800 | 29 | 24500 | 100 |
| MAR. | 1980 | 171870 | 305 | 168 | 77800 | 23 | 10500 | 28 | 13100 | 99 |
| APR. | 1980 | 243120 | 314 | 172 | 113000 | 23 | 15400 | 29 | 19100 | 100 |
| MAY | 1980 | 553340 | 336 | 184 | 275000 | 26 | 38500 | 31 | 46400 | 110 |
| JUNE | 1980 | 82820 | 327 | 180 | 40100 | 25 | 5550 | 30 | 6770 | 100 |
| JULY | 1980 | 62610 | 326 | 179 | 30200 | 25 | 4170 | 30 | 5090 | 100 |
| AUG. | 1980 | 36984 | 337 | 185 | 18400 | 26 | 2590 | 31 | 3110 | 110 |
| SEPT | 1980 | 40160 | 343 | 187 | 20300 | 26 | 2870 | 32 | 3430 | 110 |
| TOTAL | | 2053545 | ** | ** | 961000 | ** | 131000 | ** | 162000 | ** |
| WTD. AVG. | | 5611 | 316 | 173 | ** | 24 | ** | 29 | ** | 100 |

### SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 294 | 225 | 296 | 302 | 325 | 324 | 294 | 336 | 330 | 331 | 337 | 344 |
| 2 | 301 | 266 | 298 | 305 | 327 | 320 | 298 | 334 | 331 | 325 | 336 | 338 |
| 3 | 303 | 257 | 297 | 303 | 328 | 316 | 311 | 333 | 322 | 326 | 335 | 337 |
| 4 | 302 | 275 | 299 | 302 | 326 | 321 | 316 | 332 | 337 | 327 | 337 | 339 |
| 5 | 304 | 289 | 298 | 301 | 328 | 327 | 309 | 332 | 336 | 326 | 338 | 338 |
| 6 | 305 | 293 | 302 | 300 | 325 | 328 | 313 | 335 | 331 | 325 | 339 | 328 |
| 7 | 306 | 295 | 304 | 303 | 324 | 329 | 311 | 337 | 333 | 324 | 336 | 332 |
| 8 | 304 | 296 | 305 | 304 | 322 | 331 | 312 | 336 | 334 | 325 | 335 | 336 |
| 9 | 313 | 297 | 306 | 305 | 233 | 332 | 313 | 338 | 333 | 326 | 339 | 335 |
| 10 | 311 | 295 | 305 | 310 | 237 | 334 | 315 | 339 | 328 | 325 | 337 | 345 |
| 11 | 309 | 299 | 304 | 309 | 287 | 333 | 317 | 341 | 327 | 326 | 340 | 352 |
| 12 | 310 | 302 | 295 | 308 | 305 | 332 | 319 | 340 | 328 | 325 | 339 | 357 |
| 13 | 312 | 298 | 253 | 307 | 326 | 334 | 315 | 342 | 329 | 324 | 338 | 356 |
| 14 | 313 | 300 | 266 | 308 | 317 | 337 | 272 | 338 | 328 | 325 | 340 | 355 |
| 15 | 314 | 301 | 283 | 306 | 324 | 339 | 307 | 340 | 326 | 324 | 336 | 354 |
| 16 | 315 | 304 | 288 | 308 | 326 | 340 | 315 | 334 | 327 | 323 | 340 | 353 |
| 17 | 316 | 305 | 296 | 309 | 328 | 334 | 322 | 326 | 328 | 324 | 335 | 352 |
| 18 | 314 | 304 | 298 | 310 | 321 | 336 | 325 | 335 | 326 | 326 | 338 | 351 |
| 19 | 315 | 306 | 299 | 312 | 316 | 335 | 326 | 338 | 327 | 325 | 341 | 339 |
| 20 | 316 | 304 | 298 | 311 | 315 | 336 | 328 | 334 | 326 | 326 | 343 | 338 |
| 21 | 315 | 306 | 297 | 305 | 317 | 319 | 329 | 336 | 325 | 330 | 342 | 343 |
| 22 | 310 | 188 | 296 | 297 | 318 | 314 | 330 | 335 | 321 | 327 | 341 | 337 |
| 23 | 297 | 253 | 299 | 278 | 320 | 311 | 331 | 339 | 326 | 320 | 343 | 345 |
| 24 | 308 | 271 | 291 | 260 | 319 | 317 | 330 | 338 | 323 | 322 | 345 | 350 |
| 25 | 301 | 276 | 285 | 290 | 318 | 326 | 299 | 337 | 324 | 325 | 344 | 348 |
| 26 | 306 | 281 | 282 | 319 | 320 | 328 | 301 | 339 | 322 | 326 | 340 | 355 |
| 27 | 317 | 285 | 275 | 315 | 318 | 324 | 302 | 343 | 323 | 329 | 337 | 350 |
| 28 | 319 | 289 | 265 | 318 | 320 | 242 | 315 | 341 | 325 | 328 | 333 | 347 |
| 29 | 322 | 290 | 280 | 320 | 321 | 298 | 329 | 343 | 321 | 324 | 331 | 348 |
| 30 | 319 | 292 | 285 | 318 | --- | 292 | 334 | 336 | 316 | 326 | 332 | 337 |
| 31 | 238 | --- | 300 | 320 | --- | 306 | --- | 334 | --- | 333 | 330 | --- |
| MEAN | 307 | 285 | 292 | 305 | 314 | 322 | 315 | 337 | 327 | 326 | 338 | 345 |

## 08066500 TRINITY RIVER AT ROMAYOR, TX--Continued

### TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25.0 | 17.0 | 12.0 | --- | 9.0 | 12.0 | 16.0 | 17.0 | 25.0 | 28.0 | 28.0 | 27.0 |
| 2 | 25.0 | 17.0 | 12.0 | 10.0 | --- | --- | 16.0 | 17.0 | 25.0 | 28.0 | 28.0 | 27.0 |
| 3 | 25.0 | 17.0 | 12.0 | 10.0 | 9.0 | 10.0 | 16.0 | --- | 25.0 | 28.0 | 28.0 | 27.0 |
| 4 | --- | 17.0 | --- | 10.0 | 9.0 | 12.0 | 16.0 | 20.0 | 26.0 | 29.0 | 28.0 | --- |
| 5 | --- | 17.0 | 12.0 | 10.0 | 9.0 | 11.0 | 16.0 | 20.0 | 26.0 | 28.0 | 28.0 | 27.0 |
| 6 | 25.0 | --- | 12.0 | 10.0 | 10.0 | 12.0 | 18.0 | 20.0 | 26.0 | 28.0 | 28.0 | 27.0 |
| 7 | 25.0 | 17.0 | 12.0 | 10.0 | 10.0 | 12.0 | 18.0 | 20.0 | --- | 28.0 | 28.0 | 27.0 |
| 8 | 24.0 | 17.0 | 12.0 | 10.0 | 12.0 | 12.0 | 18.0 | 20.0 | 26.0 | 29.0 | 28.0 | 26.0 |
| 9 | 19.0 | 19.0 | 12.0 | 10.0 | 12.0 | 12.0 | 18.0 | 20.0 | 25.0 | 29.0 | 28.0 | 26.0 |
| 10 | --- | 19.0 | 12.0 | 10.0 | 9.0 | 14.0 | --- | 20.0 | 25.0 | 29.0 | 28.0 | 26.0 |
| 11 | 19.0 | 17.0 | 12.0 | 15.0 | 9.0 | 14.0 | 18.0 | 20.0 | 24.0 | 29.0 | 27.0 | 26.0 |
| 12 | 19.0 | 15.0 | 15.0 | 12.0 | 9.0 | 15.0 | 18.0 | 20.0 | 24.0 | 29.0 | 27.0 | 26.0 |
| 13 | 19.0 | 15.0 | 15.0 | 12.0 | 9.0 | 14.0 | 15.0 | 20.0 | 24.0 | 29.0 | 27.0 | 26.0 |
| 14 | 20.0 | 15.0 | --- | 12.0 | 9.0 | 14.0 | 14.0 | 21.0 | 25.0 | 29.0 | 27.0 | --- |
| 15 | 20.0 | 15.0 | 12.0 | 12.0 | 9.0 | 14.0 | 14.0 | 21.0 | 25.0 | 29.0 | 28.0 | 28.0 |
| 16 | 22.0 | 15.0 | 12.0 | 15.0 | 9.0 | 14.0 | 14.0 | 21.0 | 25.0 | --- | 27.0 | 28.0 |
| 17 | 24.0 | --- | 12.0 | 15.0 | 7.0 | 14.0 | 16.0 | 21.0 | 25.0 | 29.0 | 27.0 | 28.0 |
| 18 | 25.0 | 15.0 | 8.0 | 15.0 | 7.0 | 13.0 | 16.0 | 21.0 | 25.0 | 29.0 | 28.0 | 28.0 |
| 19 | 25.0 | 18.0 | 8.0 | 15.0 | 10.0 | 14.0 | 16.0 | 21.0 | 25.0 | 28.0 | 28.0 | 28.0 |
| 20 | 25.0 | 15.0 | 14.0 | 15.0 | 10.0 | 14.0 | 17.0 | 22.0 | 25.0 | 28.0 | 28.0 | 28.0 |
| 21 | 25.0 | 15.0 | 14.0 | 15.0 | 12.0 | 14.0 | 17.0 | 22.0 | 25.0 | 28.0 | --- | 28.0 |
| 22 | 25.0 | 15.0 | 14.0 | 15.0 | 12.0 | 14.0 | 17.0 | 23.0 | 25.0 | 29.0 | 28.0 | 28.0 |
| 23 | 24.0 | 15.0 | 14.0 | 15.0 | 14.0 | 14.0 | 17.0 | 23.0 | 25.0 | 28.0 | 28.0 | 28.0 |
| 24 | 24.0 | 15.0 | 12.0 | 12.0 | 14.0 | 14.0 | 17.0 | 23.0 | 25.0 | 28.0 | --- | 28.0 |
| 25 | 24.0 | 17.0 | --- | 12.0 | 14.0 | 14.0 | 17.0 | 23.0 | 25.0 | 28.0 | 28.0 | 28.0 |
| 26 | 20.0 | 17.0 | 12.0 | 14.0 | 14.0 | 14.0 | --- | 23.0 | 25.0 | 28.0 | 28.0 | 28.0 |
| 27 | 20.0 | 15.0 | 12.0 | 12.0 | 14.0 | 14.0 | 17.0 | 23.0 | 27.0 | 28.0 | 28.0 | --- |
| 28 | 20.0 | 15.0 | 12.0 | 12.0 | 15.0 | 14.0 | 17.0 | 23.0 | 28.0 | 28.0 | 28.0 | 27.0 |
| 29 | 20.0 | 15.0 | 12.0 | 12.0 | 15.0 | 16.0 | 17.0 | 25.0 | 28.0 | 28.0 | 27.0 | 27.0 |
| 30 | 20.0 | 12.0 | 12.0 | 12.0 | --- | 14.0 | 17.0 | 25.0 | 28.0 | 28.0 | 27.0 | 27.0 |
| 31 | 19.0 | --- | 12.0 | 9.0 | --- | 14.0 | --- | --- | --- | 28.0 | 27.0 | --- |
| MEAN | 22.5 | 16.0 | 12.0 | 12.5 | 11.0 | 13.5 | 16.5 | 21.0 | 25.5 | 28.5 | 27.5 | 27.0 |

## 08067000 TRINITY RIVER AT LIBERTY, TX

**LOCATION.**--Lat 30°03'27", long 94°49'05", Liberty County, Hydrologic Unit 12030203, near center of channel at upstream side of upstream bridge on U.S. Highway 90 in Liberty, 345 ft (105 m) downstream from Texas and New Orleans Railroad Co. bridge, and at mile 40.3 (64.8 km).

**DRAINAGE AREA.**--17,468 $mi^2$ (45,242 $km^2$).

**PERIOD OF RECORD.**--October 1938 to September 1940 (gage heights, discharge measurements, and some records of daily discharge), October 1940 to current year (high-water records only). Gage-height records collected in this vicinity since 1903 are contained in reports of the National Weather Service.

**REVISED RECORDS.**--WSP 1922: Drainage area.

**GAGE.**--Water-stage recorder. Datum of gage is 2.22 ft (0.677 m) below National Geodetic Vertical Datum of 1929; unadjusted for land-surface subsidence. Prior to Mar. 13, 1973, nonrecording gage at site 105 ft (32 m) downstream at same datum.

**REMARKS.**--Records poor. Discharge below 10,000 $ft^3/s$ (283 $m^3/s$) not published. Published discharges are estimated using records for Trinity River near Romayor (station 08066500), intervening area computation, and discharge measurements. Flow is regulated by Livingston Reservoir (station 08066190) 88.9 mi (143.0 km) upstream. Many diversions above station for municipal supplies, industrial uses, and irrigation.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum discharge, 114,000 $ft^3/s$ (3,230 $m^3/s$) May 12, 1942, gage height, 29.38 ft (8.955 m); minimum not determined (affected by tides); minimum gage height observed, 2.32 ft (0.707 m) Nov. 24, 1970.

Maximum stage since at least 1903, that of May 12, 1942.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood of May 8-11, 1922, reached a stage of 28.6 ft (8.72 m), present datum, from observation by the National Weather Service at nonrecording gage on railroad bridge upstream.

**EXTREMES FOR CURRENT YEAR.**--Maximum daily discharge, 60,000 $ft^3/s$ (1,700 $m^3/s$) Apr. 24; maximum gage height, 28.50 ft (8.687 m) Apr. 24; minimum discharge not determined (affected by tides); minimum gage height, 2.64 ft (0.805 m) Dec. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | --- | 12500 | 22000 | --- | 27000 | --- | | | | |
| 2 | | | --- | 10500 | 22000 | --- | 24000 | --- | | | | |
| 3 | | | --- | --- | 22000 | --- | 19500 | --- | | | | |
| 4 | | | --- | --- | 20500 | --- | 15500 | --- | | | | |
| 5 | | | --- | --- | 15500 | --- | 12000 | --- | | | | |
| 6 | | | --- | --- | 10500 | --- | 10000 | --- | | | | |
| 7 | | | --- | --- | --- | --- | --- | --- | | | | |
| 8 | | | --- | --- | --- | --- | --- | --- | | | | |
| 9 | | | --- | --- | --- | --- | --- | --- | | | | |
| 10 | | | --- | --- | --- | --- | --- | --- | | | | |
| 11 | | | --- | --- | 13500 | --- | --- | --- | | | | |
| 12 | | | --- | --- | 15000 | --- | --- | --- | | | | |
| 13 | | | --- | --- | 16000 | --- | --- | --- | | | | |
| 14 | | | --- | --- | 17000 | --- | --- | --- | | | | |
| 15 | | | 10700 | --- | 17700 | --- | --- | --- | | | | |
| 16 | | | 10700 | --- | 18500 | --- | --- | 12500 | | | | |
| 17 | | | 10400 | --- | 18500 | --- | --- | 27000 | | | | |
| 18 | | | --- | --- | 18500 | --- | --- | 41000 | | | | |
| 19 | | | --- | --- | 16000 | --- | --- | 42500 | | | | |
| 20 | | | --- | --- | 12000 | --- | 10000 | 44500 | | | | |
| 21 | | | --- | --- | 10000 | --- | 11000 | 45000 | | | | |
| 22 | | | --- | --- | --- | --- | 12000 | 44500 | | | | |
| 23 | | | --- | --- | --- | --- | 12000 | 42000 | | | | |
| 24 | | | --- | 13500 | --- | --- | 11000 | 38000 | | | | |
| 25 | | | --- | 17000 | --- | --- | 10000 | 33000 | | | | |
| 26 | | | --- | 20500 | --- | --- | 11000 | 28000 | | | | |
| 27 | | | --- | 22200 | --- | --- | 10000 | 24000 | | | | |
| 28 | | | --- | 22500 | --- | --- | --- | 22000 | | | | |
| 29 | | | 11200 | 22000 | --- | 20500 | --- | 19500 | | | | |
| 30 | | | 12500 | 22000 | --- | 27000 | --- | 15500 | | | | |
| 31 | | | 12500 | 22000 | --- | 27000 | --- | 12000 | | | | |
| TOTAL | | | --- | --- | --- | --- | --- | --- | | | | |
| MEAN | | | --- | --- | --- | --- | --- | --- | | | | |
| MAX | | | --- | --- | --- | --- | --- | --- | | | | |
| MIN | | | --- | --- | --- | --- | --- | --- | | | | |
| AC-FT | | | --- | --- | --- | --- | --- | --- | | | | |

CAL YR 1979 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1980 TOTAL - MEAN - MAX - MIN - AC-FT -

## 08067080 DEVERS CANAL NEAR LIBERTY, TX

LOCATION.--Lat 29°57'58", long 94°43'17", Liberty County, Hydrologic Unit 12030203, in flume over Farm Road 563, 250 ft (76 m) downstream from pump plant No. 2, and 8 mi (13 km) southeast of Liberty.

PERIOD OF RECORD.--March to December 1971 (elevation and discharge measurements only), January 1972 to current year (monthly discharge only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Discharge furnished by Trinity River Authority. Occasional discharge measurements were made by the Geological Survey to check pump ratings. Flow is diverted from Trinity River at pump plant No. 1 through a canal 4.7 mi (7.6 km) to pump plant No. 2, located 250 ft (76 m) upstream from station. Water is furnished by the Trinity River Authority for irrigation.

### MONTHLY DISCHARGE, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| MONTH | PUMPAGE IN ACRE-FEET |
|---|---|
| OCTOBER...................... | 174 |
| NOVEMBER..................... | 1,280 |
| DECEMBER..................... | 0 |
| CAL YR 1979.................. | 84,134 |
| JANUARY...................... | 0 |
| FEBRUARY..................... | 0 |
| MARCH........................ | 4,360 |
| APRIL........................ | 17,820 |
| MAY.......................... | 17,900 |
| JUNE......................... | 24,920 |
| JULY......................... | 21,370 |
| AUGUST....................... | 9,510 |
| SEPTEMBER.................... | 2,060 |
| WTR YR 1980.................. | 99,394 |

NOTE.--Above values of discharge about 5 percent low because of pump ratings used in computations.

## CEDAR BAYOU BASIN

### 08067500 CEDAR BAYOU NEAR CROSBY, TX

LOCATION.--Lat 29°58'21", long 94°59'08", Liberty County, Hydrologic Unit 12040203, on left bank at downstream side of bridge on U.S. Highway 90 and 6.6 mi (10.6 km) northeast of Crosby.

DRAINAGE AREA.--64.9 mi² (168.1 km²).

PERIOD OF RECORD.--March to August 1946, March 1963 to February 1964, May to August 1971 (discharge measurements only), October 1971 to current year.
Water-quality records: Chemical, biochemical, and pesticide analyses: May 1971 to September 1979.

GAGE.--Water-stage recorder. Datum of gage is 31.31 ft (9.543 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Low flow is sustained by industrial effluent and drainage from irrigated lands. Diversion for irrigation upstream from station. A recording rain gage is operated at this station.

AVERAGE DISCHARGE.--9 years (water years 1972-80), 80.8 ft³/s (2.288 m³/s), 58,540 acre-ft/yr (72.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,500 ft³/s (99.1 m³/s) July 26, 1979, gage height, 24.82 ft (7.565 m); maximum gage height, 24.91 ft (7.593 m) June 13, 1973; no flow Mar. 8, 15-18, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,580 ft³/s (44.7 m³/s) Jan. 22 at 1300 hours, gage height, 19.10 ft (5.822 m), no other peak above base of 1,200 ft³/s (34.0 m³/s); minimum daily, 0.06 ft³/s (0.002 m³/s) Aug. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.4 | 219 | 5.4 | 15 | 22 | 50 | 113 | 17 | 4.0 | 6.7 | 6.8 | .86 |
| 2 | 5.7 | 62 | 5.2 | 12 | 19 | 40 | 50 | 31 | 3.8 | 7.1 | 12 | .72 |
| 3 | 4.5 | 28 | 5.2 | 13 | 16 | 30 | 36 | 24 | 3.6 | 5.6 | 13 | .86 |
| 4 | 4.2 | 17 | 4.7 | 17 | 14 | 20 | 36 | 18 | 3.4 | 9.3 | 9.6 | 1.3 |
| 5 | 3.7 | 11 | 4.3 | 12 | 12 | 15 | 29 | 15 | 3.2 | 12 | 7.4 | 2.8 |
| 6 | 3.7 | 8.0 | 3.9 | 11 | 11 | 12 | 20 | 14 | 3.0 | 11 | 9.3 | 58 |
| 7 | 3.5 | 6.0 | 3.7 | 11 | 10 | 13 | 25 | 14 | 2.8 | 10 | 9.6 | 40 |
| 8 | 3.0 | 4.7 | 3.5 | 9.1 | 119 | 11 | 26 | 16 | 4.5 | 10 | 6.3 | 24 |
| 9 | 2.6 | 4.1 | 3.0 | 9.7 | 660 | 10 | 20 | 15 | 13 | 8.7 | 8.4 | 17 |
| 10 | 2.0 | 3.5 | 2.7 | 9.1 | 311 | 9.4 | 29 | 14 | 17 | 7.5 | 7.1 | 9.3 |
| 11 | 1.9 | 2.4 | 2.4 | 9.2 | 128 | 8.4 | 28 | 13 | 11 | 6.1 | 4.5 | 9.9 |
| 12 | 1.9 | .91 | 13 | 8.0 | 81 | 7.8 | 25 | 12 | 7.8 | 6.6 | 11 | 6.6 |
| 13 | 2.1 | 1.4 | 119 | 7.5 | 63 | 7.2 | 54 | 12 | 5.8 | 5.3 | 4.8 | 3.5 |
| 14 | 3.0 | 2.0 | 78 | 7.0 | 55 | 6.5 | 50 | 14 | 2.3 | 2.2 | 1.5 | 1.5 |
| 15 | 1.6 | 1.1 | 37 | 6.5 | 59 | 6.0 | 22 | 21 | 1.5 | 1.2 | 1.0 | 1.6 |
| 16 | 1.3 | 1.5 | 24 | 6.2 | 85 | 5.6 | 16 | 71 | 4.9 | 2.4 | .60 | 1.2 |
| 17 | 1.3 | 1.6 | 18 | 15 | 84 | 5.4 | 14 | 306 | 8.8 | 2.0 | .33 | 1.3 |
| 18 | 1.3 | 2.5 | 13 | 31 | 60 | 5.2 | 12 | 206 | 5.4 | .93 | .12 | 1.3 |
| 19 | 1.3 | 3.1 | 11 | 19 | 51 | 5.0 | 11 | 275 | 3.4 | .71 | .06 | 7.4 |
| 20 | 1.1 | 3.4 | 11 | 65 | 40 | 7.0 | 10 | 248 | 4.9 | .61 | 1.0 | 8.7 |
| 21 | 1.1 | 5.1 | 10 | 700 | 30 | 50 | 20 | 64 | 9.0 | 1.8 | 1.3 | 8.7 |
| 22 | 3.8 | 36 | 9.3 | 1260 | 25 | 35 | 15 | 167 | 9.3 | 1.2 | 1.5 | 7.4 |
| 23 | 5.8 | 67 | 11 | 1010 | 20 | 25 | 13 | 65 | 8.5 | 1.2 | 1.3 | 6.8 |
| 24 | 2.8 | 41 | 15 | 725 | 17 | 20 | 12 | 23 | 8.7 | 1.5 | 1.2 | 3.0 |
| 25 | 2.1 | 23 | 15 | 293 | 15 | 15 | 261 | 8.0 | 5.9 | .85 | .86 | 1.3 |
| 26 | 1.9 | 15 | 13 | 111 | 14 | 13 | 647 | 9.6 | 5.1 | 6.8 | 1.0 | 1.7 |
| 27 | 1.7 | 12 | 9.7 | 57 | 13 | 384 | 335 | 8.2 | 4.9 | 8.4 | .86 | 7.1 |
| 28 | 1.5 | 9.2 | 8.9 | 37 | 12 | 867 | 74 | 6.8 | 5.0 | 14 | 1.0 | 18 |
| 29 | 1.5 | 7.6 | 22 | 31 | 11 | 798 | 32 | 5.5 | 5.4 | 21 | 1.2 | 18 |
| 30 | 83 | 6.1 | 31 | 33 | --- | 758 | 18 | 4.8 | 5.9 | 18 | .72 | 683 |
| 31 | 615 | --- | 21 | 27 | --- | 318 | --- | 4.3 | --- | 9.0 | .27 | --- |
| TOTAL | 777.3 | 605.21 | 533.9 | 4577.3 | 2057 | 3557.5 | 2053 | 1722.2 | 181.8 | 199.70 | 125.62 | 952.84 |
| MEAN | 25.1 | 20.2 | 17.2 | 148 | 70.9 | 115 | 68.4 | 55.6 | 6.06 | 6.44 | 4.05 | 31.8 |
| MAX | 615 | 219 | 119 | 1260 | 660 | 867 | 647 | 306 | 17 | 21 | 13 | 683 |
| MIN | 1.1 | .91 | 2.4 | 6.2 | 10 | 5.0 | 10 | 4.3 | 1.5 | .61 | .06 | .72 |
| AC-FT | 1540 | 1200 | 1060 | 9080 | 4080 | 7060 | 4070 | 3420 | 361 | 396 | 249 | 1890 |
| (††) | 4.11 | 1.50 | 2.10 | 7.09 | 2.19 | 6.37 | 2.35 | 3.90 | .65 | .50 | 1.60 | 8.00 |

CAL YR 1979 TOTAL 57118.59 MEAN 156 MAX 3230 MIN .00 AC-FT 113300 †† 69.75
WTR YR 1980 TOTAL 17343.37 MEAN 47.4 MAX 1260 MIN .06 AC-FT 34400 †† 40.36

†† Rainfall, in inches.

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Because the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than continuous stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage of those events. The data collected for special reasons are called measurements at miscellaneous sites.

Streamflow data collected at partial-record stations where water-quality data other than observations of water temperature are not obtained are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations; the second is a table of annual maximum stage and (or) discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low and high flows are given in a third table. Discharge measurements and water-quality data collected at partial-record stations are presented in downstream order in the section of this report entitled "Gaging-station records."

### Low-flow partial-record stations

Measurements of streamflow at low-flow partial-record stations that are not published in the gaging-station section are given in the following table. Most of the measurements of low flow were made during periods when streamflow was sustained primarily by ground-water discharge. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will indicate the low-flow potential of the stream. The years listed in the column headed "Period of record" identifies the water years in which measurements were made at the same or at practically the same site.

Discharge measurements made at low-flow partial-record stations during water year 1980

| Station No. | Station name | Location | Drainage area (sq mi) | Period of record | Measurements | |
|---|---|---|---|---|---|---|
| | | | | | Date | Discharge (ft³/s) |
| | | Arkansas River basin | | | | |
| 07227700 | Chicken Creek near Amarillo, Tex. | Lat 35°28'29", long 101°45'35", Potter County, about 1.5 mi northeast of LX Ranch headquarters and about 18 mi northeast of Amarillo. | (a) | 1953-80 | 10-11-79<br>2-28-80<br>7-25-80 | 2.14<br>1.53<br>.19 |
| | | Red River basin | | | | |
| 07299750 | Wanderers Creek at Odell, Tex. | Lat 34°20'50", long 99°25'15", Wilbarger County, at county road bridge and 0.25 mi northwest of Odell Post Office. | 199 | 1949-50,<br>1952-80 | 1-16-80<br>9- 2-80 | 3.65<br>.61 |
| 07299890 | Lelia Lake Creek below Bell Creek near Hedley, Tex. | Lat 34°56'08", long 100°41'46", Donley County, 150 ft downstream from county road crossing, 1.0 mi downstream from mouth of Bell Creek, and about 5 mi north of Hedley. | 74 | 1964-80 | 9- 8-80 | 1.32 |
| 07303300 | Elm Creek near Shamrock, Tex. | Lat 35°07'21", long 100°17'07", Collingsworth County, at county road bridge, 1,500 ft downstream from Fort Worth and Denver (Burlington) Railway Company bridge, and about 6 mi southwest of Shamrock. | (a) | 1947-80 | 2-27-80<br>7-22-80 | 2.31<br>1.40 |
| 07307700 | Roaring Springs near Roaring Springs, Tex. | Lat 33°51'12", long 100°51'53", Motley County, 3.5 mi south of Roaring Springs. | (a) | 1937<br>1943-80 | 12- 3-79 | 1.05 |
| | | Neches River basin | | | | |
| 08041550 | Village Creek at State Highway 327 near Silsbee, Tex. | Lat 30°20'48", long 94°14'20", Hardin County, at bridge on State Highway 327, about 1.6 mi upstream from mouth of Mill Creek, and 2.7 mi west of Silsbee. | - | 1979-80 | 11-16-79<br>6- 9-80<br>7-24-80<br>9- 3-80 | 405<br>303<br>103<br>92 |
| 08041720 | Pine Island Bayou at State Highway 105 near Sour Lake, Tex. | Lat 30°08'08", long 94°16'44", Hardin-Jefferson County line, at bridge on State Highway 105, about 2.0 mi upstream from mouth of Little Pine Island Bayou, and 7.9 mi east of Sour Lake. | - | 1979-80 | 10- 4-79<br>11-19-79<br>6-11-80<br>9- 4-80 | 98<br>22<br>53<br>8.0 |
| | | Trinity River basin | | | | |
| 08065975 | Harmon Creek near Huntsville, Tex. | Lat 30°49'12", long 95°29'09", Walker County, at end of county road, 2.2 mi east of Farm Road 980, 7.5 mi northeast of Huntsville, and about 9 mi southwest of Riverside. | 89.2 | 1973-80 | 10-16-79<br>11-26-79<br>1- 7-80<br>5- 5-80<br>6-16-80<br>8- 4-80 | 8.0<br>7.7<br>11<br>10<br>6.3<br>3.9 |
| 08066210 | Long King Creek near Goodrich, Tex. | Lat 30°36'16", long 94°57'26", Polk County, at bridge on Farm Road 1988, 0.7 mi west of Goodrich, and 4.5 mi upstream from mouth. | 220 | 1973-80 | 10-22-79<br>12- 6-79<br>2-27-80<br>7- 8-80<br>9-23-80 | 70<br>42<br>55<br>10<br>9.7 |

a Not applicable.

## Crest-stage partial-record stations

The following table contains annual maximum stage and (or) discharge at partial-record stations operated primarily for the purpose of defining the flooding characteristics of the streams. At stations where discharge is given, or is footnoted "to be determined", a stage-discharge relation has been, or will be, defined by discharge measurements obtained by current meter or by indirect procedures. Water-stage recorders are located at these flood-hydrograph stations to facilitate complete hydrograph definition. At stations where only the maximum stage is given (discharge column is dashed), data are generally collected for use in stage-frequency studies of flood-profile definition. Gages at these stations usually consist of a device that will register the peak stage occuring between inspections of the gage. The years used in the column "Period of record" identify the years in which the annual maximum has been determined.

Annual maximum stage and (or) discharge during water year 1980

| Station No. | Station name | Location | Drainage area (sq mi) | Period of record | Annual maximum | | |
|---|---|---|---|---|---|---|---|
| | | | | | Date | Elevation (feet) | Discharge (ft³/s) |
| Sabine River basin | | | | | | | |
| 08019200 | Sabine River near Hawkins, Tex. | Lat 32°33'35", long 95°12'23", Wood County, on left bank at upstream side of bridge on State Highway 14, 1.9 mi south of Hawkins, 2.1 mi upstream from East Mill Creek, 3.4 mi downstream from Lynn Creek, and at mile 427.4 | - | 1976-80 | 1-30-80 | 291.92 | - |
| 08019430 | Big Sandy Creek near Hawkins, Tex. | Lat 32°39'04", long 94°09'59", Wood County, near left end at downstream side of bridge on Farm Road 1795, 0.3 mi downstream from Mill Creek, 0.6 mi downstream from Peron Branch, 2.3 mi upstream from Gin Creek, and 4.9 mi northeast of Hawkins. | 196 | 1980 | 1-24-80 | 14.21 | 1;930 |
| 08020500 | Sabine River near Longview, Tex. | Lat 32°28'05", long 94°46'50", Gregg County, on left bank at downstream side of upstream bridge on U.S. Highway 259, 0.5 mi upstream from Missouri Pacific Railroad bridge, 2.6 mi upstream from Rabbit Creek, 3.2 mi southwest of Longview, 5.2 mi downstream from Hawkins Creek, and at mile 372.8. | - | 1904-6◆,<br>1923-32◆,<br>1976-80 | 2- 7-80 | 253.23 | - |
| 08022000 | Sabine River near Tatum, Tex. | Lat 32°22'11", long 94°27'28", Panola County, near right bank at downstream side of bridge on State Highway 43, 5.1 mi northeast of Tatum, 5.2 mi upstream from Potters Creek, 5.6 mi downstream from Cherokee Bayou, and at mile 339.4. | 3,493 | 1938-78◆,<br>1979-80 | 2-10-80 | 223.41 | - |
| Trinity River basin | | | | | | | |
| 08057090 | White Rock Creek at Farm Road 544 near Plano, Tex. | Lat 33°01'40", long 96°48'45", Collin County, at bridge on Farm Road 544, 6.6 mi west of Plano. | — | 1978-80 | 1-22-80 | 603.85 | - |
| 08057205 | Storm Sewer at Arborside Drive and Moss Farm Lane, Dallas, Tex. | Lat 32°53'43", long 96°44'52", Dallas County, at culvert on Arborside Drive in northeast Dallas and 0.7 mi upstream from White Rock Creek. | .22 | 1978-80 | 6-20-80 | 510.47 | - |
| 08057442 | Prairie Creek at Jennie Lee Street, Dallas, Tex. | Lat 32°45'16", long 96°39'58", Dallas County, at bridge on Jennie Lee Street in east Dallas and 8.2 mi upstream from mouth. | 3.16 | 1976-80 | 5-15-80 | 474.52 | - |
| 08057447 | Hattfields Branch at Seagoville Road, Dallas, Tex. | Lat 32°42'34", long 96°39'36", Dallas County, at bridge on Seagoville Road in east Dallas and 2.5 mi upstream from mouth. | 2.10 | 1976-80 | 9-29-80 | 432.30 | - |
| 08061920 | South Mesquite Creek at State Highway 352, Mesquite, Tex. | Lat 32°46'09", long 96°37'18", Dallas County, at bridge on State Highway 352 in west Mesquite and 9.6 mi upstream from mouth (discontinued). | 13.4 | 1969-79 | 5- 6-69<br>5-30-70<br>10-19-71<br>6- 4-73<br>9-20-74 | 448.12<br>442.63<br>447.57<br>446.93<br>444.60 | a12,500<br>a1,900<br>a10,800<br>a8,890<br>a3,660 |

◆ Operated as a continuous-record station.
a Revised.

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Measurements of streamflow at points other than gaging stations of partial-record stations are given in the following table:

Discharge measurements made at miscellaneous sites during water year 1980

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Measurements | |
|---|---|---|---|---|---|---|
| | | | | | Date | Discharge ($ft^3/s$) |
| | | Sabine River basin | | | | |
| Sabine River | Gulf of Mexico | Lat 32°25'00", long 94°42'34", Gregg County, at State Highway 149 bridge, 6.6 mi southeast of Longview, and 13.6 mi northwest of Tatum, Tex. | - | 4-21-72 | 7-29-80 | 122 |

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October 1, 1978

# FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

| Multiply inch-pound units | By | To obtain SI units |
|---|---|---|
| | *Length* | |
| inches (in) | $2.54 \times 10^{1}$ | millimeters (mm) |
| | $2.54 \times 10^{-2}$ | meters (m) |
| feet (ft) | $3.048 \times 10^{-1}$ | meters (m) |
| miles (mi) | $1.609 \times 10^{0}$ | kilometers (km) |
| | *Area* | |
| acres | $4.047 \times 10^{3}$ | square meters ($m^2$) |
| | $4.047 \times 10^{-1}$ | square hectometers ($hm^2$) |
| | $4.047 \times 10^{-3}$ | square kilometers ($km^2$) |
| square miles ($mi^2$) | $2.590 \times 10^{0}$ | square kilometers ($km^2$) |
| | *Volume* | |
| gallons (gal) | $3.785 \times 10^{0}$ | liters (L) |
| | $3.785 \times 10^{0}$ | cubic decimeters ($dm^3$) |
| | $3.785 \times 10^{-3}$ | cubic meters ($m^3$) |
| million gallons | $3.785 \times 10^{3}$ | cubic meters ($m^3$) |
| | $3.785 \times 10^{-3}$ | cubic hectometers ($hm^3$) |
| cubic feet ($ft^3$) | $2.832 \times 10^{1}$ | cubic decimeters ($dm^3$) |
| | $2.832 \times 10^{-2}$ | cubic meters ($m^3$) |
| cfs-days | $2.447 \times 10^{3}$ | cubic meters ($m^3$) |
| | $2.447 \times 10^{-3}$ | cubic hectometers ($hm^3$) |
| acre-feet (acre-ft) | $1.233 \times 10^{3}$ | cubic meters ($m^3$) |
| | $1.233 \times 10^{-3}$ | cubic hectometers ($hm^3$) |
| | $1.233 \times 10^{-6}$ | cubic kilometers ($km^3$) |
| | *Flow* | |
| cubic feet per second ($ft^3/s$) | $2.832 \times 10^{1}$ | liters per second (L/s) |
| | $2.832 \times 10^{1}$ | cubic decimeters per second ($dm^3/s$) |
| | $2.832 \times 10^{-2}$ | cubic meters per second ($m^3/s$) |
| gallons per minute (gal/min) | $6.309 \times 10^{-2}$ | liters per second (L/s) |
| | $6.309 \times 10^{-2}$ | cubic decimeters per second ($dm^3/s$) |
| | $6.309 \times 10^{-5}$ | cubic meters per second ($m^3/s$) |
| million gallons per day | $4.381 \times 10^{1}$ | cubic decimeters per second ($dm^3/s$) |
| | $4.381 \times 10^{-2}$ | cubic meters per second ($m^3/s$) |
| | *Mass* | |
| tons (short) | $9.072 \times 10^{-1}$ | megagrams (Mg) or metric tons |

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